MSIP Re-opener Application: Extension of Sub-Synchronous Oscillation (SSO) Detection Capabilities		
Ofgem Scheme Reference/ Name of Scheme	SPT200916 / Extension of Sub-Synchronous Oscillation (SSO) Detection Capabilities	
Investment Category	Wider Works	
Primary Investment Driver	Sub-Synchronous Oscillation (SSO) Detection Facilities	
Licence Mechanism/ Activity	Special Condition 3.14 Medium Sized Investment Projects Re-opener and Price Control Deliverable/ Clause 3.14.6 (f)	
Materiality Threshold exceeded (£3.5m)	No	
PCD primary Output	Protection & Control Equipment	
Total Project Cost (Price Control, Direct) (£m)	£0.236m	
Funding Allowance (£m)	To be confirmed	Requested
Delivery Year	2025/2026	
Reporting Table	Annual RRP – PCD Table	
PCD Modification Process	Special Condition 3.14, Appendix 1	

Issue Date	Issue No	Amendment Details
31st January 2025	1	First issue of document.

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Table of Contents

1. Abbreviations / Terminology

Table 1: Table of Abbreviations

Abbreviation	Term
ACM	Asbestos Containing Material
AIS	Air Insulated Switchgear
CDM	Construction Design and Management
CEC	Connection Entry Capacity
CT	Current Transformer
GSP	Grid Supply Point
GOOSE	Generic Object Oriented System Event
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
NESO	National Energy System Operator
NGET	National Grid Electricity Transmission
OHL	Overhead Line
PCD	Price Control Deliverable
RIIO	Revenue = Incentives + Innovation + Outputs
SCADA	Supervisory Control and Data Acquisition
SGT	Supergrid Transformer
SPT	SP Transmission
SPEN	SP Energy Networks
SSEN-T	Scottish Hydro Electric Transmission
SSO	Sub Synchronous Oscillation
STC	System Operator – Transmission Owner Code
TSR	Torsional Stress Relays
VDUM	Volume Driver Uncertainty Mechanism
VT	Voltage Transformer

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
Planning Request ESO to SPT	Planning Request of 2nd July 2024

3. Introduction

This MSIP Re-opener application defines SP Transmission's (SPT) plans to extend its existing sub-synchronous oscillation (SSO) detection capabilities, in response to an STCP 16-1 Planning Request received from National Grid Electricity System Operator (NGESO), now the National Energy System Operator (NESO).

SPT received the Planning Request relating to the extension of its existing SSO detection capabilities on 2nd July 2024[1]. Under the terms of the SO-TO Code (the STC), SPT is obliged to respond to the Planning Request, notify the NESO how it intends to accommodate the Planning Request and update its Transmission Investment Plan accordingly.

The installation of series capacitors, invertor based generators (IBGs) and high voltage direct current (HVDC) equipment in a power system introduces the risk of Sub-synchronous Oscillations (SSO). If this phenomenon should arise, it could involve one or more generating units in dynamic oscillations at frequencies below 50Hz. If not detected and mitigated, the outcome could be damage to equipment as well as widespread disruption to the GB transmission system.

SPT has developed an innovative multi-layered framework for SSO mitigation, including the provision of wide-area SSO detection and monitoring facilities combined with sub-harmonic detection relays, supporting system operability, the NESO's situational awareness in operational timescales and post-event analysis capabilities.

The existing provision of SSO monitoring facilities was focused on the B6 boundary, as part of the installation of series compensation equipment and Western HVDC Link. In view of recent system performance and events, there is now a need to extend this coverage to include circuits crossing the B4 boundary.

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):

"3.14.6 The licensee may apply to the Authority for a direction amending the outputs, delivery dates or associated allowances in Appendix1 in relation to one or more of the following activities:

(f) a system operability or constraint management project that has been requested by the System Operator".

This is one of several submissions related to this licence condition, which together will exceed the Materiality Threshold.

The needs case for the extension of SPT's sub-synchronous oscillation (SSO) detection capabilities 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.

3.1 Structure of Document

This MSIP Re-opener application is structured as follows:

[1] Detailed in Appendix 1 to this document.

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[2] 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

[2] 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 the National Energy System Operator's (NESO'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 NESO 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

The installation of series capacitors, invertor based generators (IBGs) and high voltage direct current (HVDC) equipment in a power system introduces the risk of Sub-synchronous Oscillations (SSO). If this phenomenon should arise, it could involve one or more generating units in dynamic oscillations at frequencies below 50Hz. If not detected and mitigated, the outcome could be damage to equipment as well as wide spread disruption to the GB transmission system.

SP Transmission (SPT) has developed the following innovative multi-layered framework for SSO mitigation:

[redacted]


[redacted]

A number of SSO events, of approximately 5-9Hz, were observed on the electricity transmission network in Summer 2023 and May 2024. These events caused system disturbances on the network where generators, interconnectors and transmission circuit protection systems responded to the abnormal conditions, resulting in system disruption.

The existing provision of SSO monitoring facilities was focused on the B6 boundary as part of the installation of series compensation equipment and Western HVDC Link. In view of recent system performance and events, there is now a need to extend this coverage to include circuits crossing the B4 boundary.

SPT received a Planning Request from the NESO on 2nd July 2024 in respect of the extension of existing SSO detection facilities.

4.3 Existing Wide-Area SSO Detection and Monitoring - Background

[redacted]

[redacted]

[redacted]

[redacted]

Transmission Site	Circuits
[redacted]	

[redacted]

Table 6: Monitoring of Generation Plant

Site / Unit	Input Signals
[redacted]	

4.4 Existing Sub-Harmonic Detection Relays

[redacted]

Site	Relay Location
[redacted]	

[redacted]

4.5 Alignment with RIIO-T2 Strategic Goals

As described in our RIIO-T2 plan[3] 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 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.

Enhancing situational awareness in operational timescales and post-event analysis capabilities supports increased 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.

As indicated in its Planning Request to SPT of 2nd July 2024, the NESO considers "*there to be significant benefit in extending existing sub-synchronous oscillation (SSO) detection facilities in central and southern Scotland to further support system operability, situational awareness and post-event analysis*".

[3] SP Energy Networks RIIO-T2 Business Plan

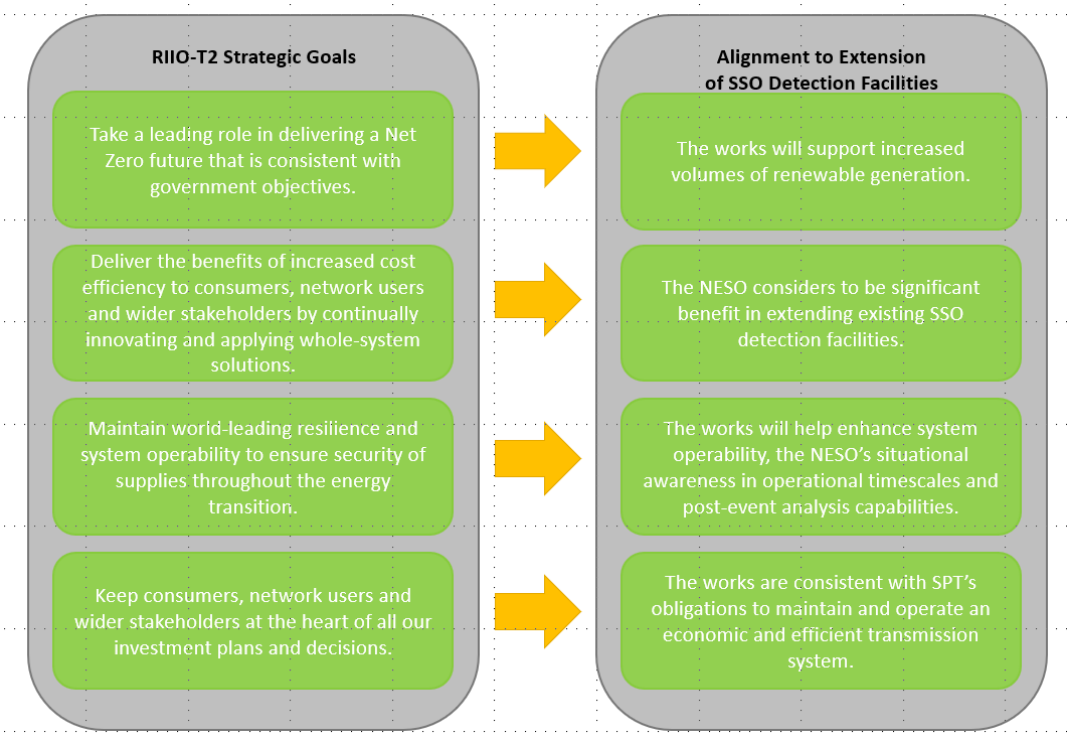

Figure 1: Alignment of SSO detection with SPT RIIO-T2 Strategic Goals

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

The works will help enhance system operability, the NESO's situational awareness in operational timescales and post-event analysis capabilities.

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

The development of SSO detection facilities 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 received from the NESO on 2nd July 2024 requests SPT consider the extension of existing facilities related to the continuous online monitoring and reporting of sub-synchronous mode frequency, amplitude and damping parameters to incorporate three phase voltage and current signals from all Supergrid interconnecting circuits with SSEN Transmission (as detailed in Table within the document). It also notes the NESO considers "*there to be significant benefit in extending existing sub-synchronous oscillation (SSO) detection facilities in central and southern Scotland to further support system operability, situational awareness and post-event analysis*".

Two options are therefore available: do nothing or extend the existing SSO detection facilities.

5.1.1 Option 1 - Do Nothing or Delay

A 'Do Nothing' or 'Delay' option is not credible in relation to this project and would be inconsistent with SPT's various statutory duties and licence obligations.

5.1.2 Option 2 - Extension of Existing SSO Detection Facilities

The existing SSO detection facilities in central and southern Scotland entered service in 2015. The scheme meets current and future performance requirements and is capable of being extended. Extending the existing system is the lowest cost option and minimises any scheme/ primary system outage requirements.

5.2 Option Assessment

The Planning Request received from the NESO relates to the extension of existing SSO detection facilities in central and southern Scotland. SPT consider it to be feasible to implement this proposal.

As the existing functionality is to be maintained and applied to new elements, the only further option which may be considered viable is a full like-for-like replacement of existing facilities. It is not necessary to replace existing SSO detection facilities to achieve the functionality required by the Planning Request however. As this approach would result in significantly higher capital costs and increased scheme outage durations for no additional benefit, the proposed option is Option 2 – Extension of Existing SSO Detection Facilities.

6. Proposed Works

6.1 Project Summary – Wide Area SSO Detection and Monitoring

In view of system performance and events during summer 2023 and early summer 2024, it is proposed to extend the continuous online monitoring and reporting of sub-synchronous mode frequency, amplitude and damping parameters to incorporate three phase voltage and current signals from all Supergrid interconnecting circuits with SSEN Transmission, as detailed in Table 8 below:

Table 8: Additional Three Phase Voltage and Current Monitoring on Transmission Circuits

Transmission Site	Circuits
Denny North 400kV	Denny North - Melgarve 400kV
Denny North 275kV	Denny North - Braco West 275kV
Kincardine 275kV	Kincardine - Alyth No.1 275kV
	Kincardine - Alyth No.2 275kV
Westfield 275kV	Westfield - Tealing 275kV
Glenrothes 275kV	Glenrothes - Tealing 275kV
Inverarnan 275kV	Inverarnan SGT1
	Inverarnan SGT2

The monitoring on the Denny North – Braco West 275kV circuit shall be migrated to the future Denny North – Braco West 400kV circuit as part of the planned Beauly – Denny 400kV Upgrade project (NOA ref. BDUP).

The monitoring on the Kincardine – Alyth No.1 and No.2 275kV circuits shall be migrated to the future Kincardine North 400kV Substation as part of the planned Kincardine North 400kV Substation project (NOA ref. LWUP).

The monitoring on the Westfield – Tealing 275kV and Glenrothes – Tealing 275kV circuits shall be migrated to the future Westfield 400kV Substation and Conland 400kV Substation respectively as part of the planned East Coast Onshore 400kV Phase 2 Reinforcement (NOA ref. TKUP) project.

Protection and control works are required to extend the existing SSO detection facilities as detailed in the associated Planning Request. The extension of the SSO detection facilities requires SPT to undertake works at the following sites, which are detailed in subsequent sections:

- Denny North 400kV Substation
- Denny North 275kV Substation
- Kincardine 275kV Substation
- Westfield 275kV Substation
- Glenrothes 275kV Substation
- Inverarnan 275kV Substation

6.1.1 Works at Denny North 400kV Substation

Works are required at Denny North 400kV Substation to install SSO detection equipment on the Denny North – Melgarve 400kV circuit.

6.1.1.1 Protection and Control Works – SSO

This work comprises the following:

[redacted]

6.1.1.2 Wide Area Monitoring Configuration

[redacted]

6.1.1.3 SCADA and Telecoms

The Denny North Substation Control and Information System (SCIS) will be modified to provide alarm facilities for the new equipment.

The existing communication link to Denny North will be configured to add the new equipment (firewall configuration).

6.1.1.4 Auxiliary Supplies Works

The supply for the new SSO equipment shall be sourced from the substation 110V DC system as appropriate.

6.1.2 Works at Denny North 275kV Substation

Works are required at Denny North 275kV Substation to install SSO detection equipment on the Denny North – Bracco West 275kV circuit.

6.1.2.1 Protection and Control Works – SSO

This work comprises the following:

[redacted]

6.1.2.2 Wide Area Monitoring Configuration

[redacted]

6.1.2.3 SCADA and Telecoms

The Denny North Substation Control and Information System (SCIS) will be modified to provide alarm facilities for the new equipment.

The existing communication link to Denny North will be configured to add the new equipment (firewall configuration).

6.1.2.4 Auxiliary Supplies Works

The supply for the new SSO equipment shall be sourced from the substation 110V DC system as appropriate.

6.1.3 Works at Kincardine 275kV Substation

Works are required at Kincardine 275kV Substation to install SSO detection equipment on the Kincardine – Alyth No.1 and No.2 275kV circuits.

6.1.3.1 Protection and Control Works – SSO

This work comprises the following:

[redacted]

6.1.3.2 Wide Area Monitoring Configuration

[redacted]

6.1.3.3 SCADA and Telecoms

The Kincardine Substation Control and Information System (SCIS) will be modified to provide alarm facilities for the new equipment.

The existing communication link to Kincardine will be configured to add the new equipment (firewall configuration).

6.1.3.4 Auxiliary Supplies Works

The supply for the new SSO equipment shall be sourced from the substation 110V DC system as appropriate.

6.1.4 Works at Westfield 275kV Substation

Works are required at Westfield 275kV Substation to install SSO detection equipment on the Westfield – Tealing 275kV circuit.

6.1.4.1 Protection and Control Works – SSO

This work comprises the following:

[redacted]

6.1.4.2 Wide Area Monitoring Configuration

[redacted]

6.1.4.3 SCADA and Telecoms

The Westfield Substation Control and Information System (SCIS) will be modified to provide alarm facilities for the new equipment.

The existing communication link to Westfield will be configured to add the new equipment (firewall configuration).

6.1.4.4 Auxiliary Supplies Works

The supply for the new SSO equipment shall be sourced from the substation 110V DC system as appropriate.

6.1.5 Works at Glenrothes 275kV Substation

Works are required at Glenrothes 275kV Substation to install SSO detection equipment on the Glenrothes – Tealing 275kV circuit.

6.1.5.1 Protection and Control Works – SSO

This work comprises the following:

[redacted]

6.1.5.2 Wide Area Monitoring Configuration

[redacted]

6.1.5.3 SCADA and Telecoms

The Glenrothes Substation Control and Information System (SCIS) will be modified to provide alarm facilities for the new equipment.

The existing communication link to Glenrothes will be configured to add the new equipment (firewall configuration).

6.1.5.4 Auxiliary Supplies Works

The supply for the new SSO equipment shall be sourced from the substation 110V DC system as appropriate.

6.1.6 Works at Inverarnan 275kV Substation

Works are required at Inverarnan 275kV Substation to install SSO detection equipment on the Inverarnan SGT1 and Inverarnan SGT2 circuits.

6.1.6.1 Protection and Control Works – SSO

This work comprises the following:

[redacted]

6.1.6.2 Wide Area Monitoring Configuration

[redacted]

6.1.6.3 SCADA and Telecoms

The Inverarnan Substation Control and Information System (SCIS) will be modified to provide alarm facilities for the new equipment.

The existing communication link to Inverarnan will be configured to add the new equipment (firewall configuration).

6.1.6.4 Auxiliary Supplies Works

The supply for the new SSO equipment shall be sourced from the substation 110V DC system as appropriate.

6.2 Project Summary – Sub-Harmonic Detection Relays

It is proposed to upgrade the existing ([redacted]) SSO monitoring relays (detailed in Section 4.4) in proximity to the B6 boundary. These upgrades involve [redacted], further enhancing system operability, situational awareness and post-event analysis capabilities.

6.3 Environmental and Consents Works

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 9 details expected energisation year and our current view of potential direct capital expenditure in RIIO-T2.

Table 9: 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
2025/26	-	-	-	-	0.112	0.124	-	-	**0.236**	**0.236**

7.2 Detailed costs

Table 10 below provides a cost breakdown representing the latest view of Direct costs for the proposed investment:

Table 10: Direct Costs

Contract Name	Start	Finish	Cost (£m)	Procurement Strategy	Cost Firmness
[redacted]					
Total			**0.236**		

7.3 Procurement Strategy

SPT Procurement strategy follows a disaggregated model, within which contracts are disaggregated and tendered separately to maximise cost efficiencies. [redacted] The installation works will be done under an existing framework due

to its minor nature. These type of 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.

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.

Status of individual contracts is detailed in Table 10 provided in Section 7.2.

Table 11: Cost Firmness Assessment

Cost Firmness as per OFGEM classification	Total Direct Cost (£m)	Total Cost (%)
[redacted]		
TOTAL	**0.236**	**100%**

As it can be seen in Table 11, [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 12 below provides a breakdown of the individual project risks followed by further detailed explanation regarding mitigation and likelihood. The provision for risk at [redacted] of the project cost is proportionate and justified.

Table 12: Risk Quantification

Risk	Description	Probability	Value (£m)
[redacted]			

[redacted]

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 13: 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	0.00	0.112	0.124	**0.236**

An aggregated view of the total cost is outlined in Table 14 below:

Table 14: Total Project Cost Aggregated view

Category	Total Price Control Project Cost (£m)	Price Control Direct Cost (£m)	Contractor Indirects* (£m)	SPT Indirects (£m)
[redacted]				

* No Contractor Indirect costs have been identified in this project.

7.7 Regulatory Outputs

As the output of the project is the extension of existing facilities to be employed by the NESO, it is proposed that the associated Price Control Deliverable is defined as follows:

Table 15: Price Control Deliverable

OSR	Scheme Name	Output	Allowance* Oncosted)	Delivery Date
SPT200916	Extension of Sub-Synchronous Oscillation (SSO) Detection Capabilities	Completion of the extension of Sub-Synchronous Oscillation (SSO) detection facilities	£0.268m	31st December 2025

*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.

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 16 below summarises the key project milestones within the delivery schedule.

Table 16: Project Milestones

Milestone	Project Phase	Estimated Completion Date
1	Commence Main Site works	February 2025
2	Complete Site works	December 2025

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 7.5 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).

SPT is engaging regularly with the NESO regarding SSO related issues, including associated system monitoring.

9. Conclusion and Recommendations

This MSIP re-opener application demonstrates the need to extend and enhance the existing SSO detection facilities in central and southern Scotland. It is aligned with a Planning Request received from the NESO in July 2024.

SPT 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 2).
- 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 – STCP 16-1 Planning Request