Branxton to Braxbess 400/132kV Collector Substation – SPT-RI-3148

Eligibility Letter

Version: 1.0, [7th Oct 2026]

BRANXTON TO BRAXBESS 400/132KV COLLECTOR SUBSTATION	
Name of the Scheme	Branxton to Braxbess 400/132kV Collector Substation - SPT-RI-3148
RRP References	Branxton BESS Collector Substation (Scheme_C&V_Calc_Load_Actuals & E1.11b ET3 Pipeline Log)
BPDT / Scheme Reference Number	*SPT201074*
Load Board Reference	Branxton BESS Collector Substation (20260728_RIIO3_Reopener_Pipeline_ET_Master_v1.2 – SPT v1 HC.xlsm – 28 August 2026 Load Board)
Investment Driver	*Local Enabling (Entry) - atypical connection*
PASE alignment	The proposed solution is not aligned with PASE.
Outputs	Construction of the Braxbess 400/132kV Collector Substation and 400kV underground cable connection to existing Branxton 400kV Substation.
Cost	*£47.38 m*
Delivery Year	2029
Applicable Reporting Tables	Last annual reporting: 2025/2026 RIIO-ET2 RRP: Scheme_C&V_Calc_Load_Actuals, D4.3_CAI (not disaggregated by scheme), E1.11b_ET3_Pipeline Log Quarterly reporting through the Load Board submissions (last update: 20260728_RIIO3_Reopener_Pipeline_ET_Master_v1.2 – SPT v1 HC– 28 August 2026 Load Board).
Historical Funding Interactions	N/A
Interactive Projects	This connection is contingent on the completion of the following TORIs: • SPT-RI-124 – 400kV GIS substation in Torness area i.e. Branxton • SPT-RI-126 – Eastern Link • SPT-RI-130 – XH and XJ Route OHL Uprating Works • SPT-RI-131 – Branxton to Eccles Uprating

BRANXTON TO BRAXBESS 400/132KV COLLECTOR SUBSTATION	
	The following TOCOs are contingent on completion of this project: • [redacted]

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1 Abbreviations / terminology

Table 1: Abbreviations

Abbreviations	Term
APM	*Advanced Procurement Mechanism*
BESS	*Battery Energy Storage System*
CAI	*Closely Associated Indirects*
CP2030	*Clean Power 2030*
CT	*Current Transformer*
CQPR	*Contractors' Quality Performance Requirement*
DBB	*Double Busbar*
ESG	*Environmental, Social and Governance*
GIS	*Gas Insulated Switchgear*
GSP	*Grid Supply Point*
HTLS	*High Temperature Low Sag*
HVDC	*High Voltage Direct Current*
LC	*License Conditions*
LMS	*Load Management Scheme*
LR	*Load Re-opener*
Mod App	*Modification Application*
MW	*Megawatt*
MVA	*Megavolt-amperes*
NESO	*National Energy System Operator*
NETS	*National Electricity Transmission System*
OHL	*Overhead Line*
PASE	*Pre-Approval of Solutions by Engineering*
PCD	*Price Control Deliverable*
PCF	*Preconstruction Funding*
PoC	*Point of Connection*
PPN	*Procurement Policy Note*
RIIO	*Revenue = Incentives + Innovation + Outputs*
RRP	*Regulatory Reporting Pack*
SME	*Small and medium-sized enterprise*
SpC	*Special license Condition*
SPT	*Scottish Power Transmission*
SQSS	*Security, Quality and Supply Standard*

Abbreviations	Term
SSEP	*Strategic Spatial Energy Plan*
STEM	*Science, Technology, Engineering and Mathematics*
TOCO	*Transmission Owner Construction Offer*
TORI	*Transmission Owner Reinforcement Instruction*
VDUM	*Volume Driver Uncertainty Mechanism*
WF	*Wind Farm*

2 Document Catalogue

Table 2: Table of Reference Documents

Document Reference	Description of Relevance
Load Re-opener Guidance and Submission Requirements Document	*Establish minimum requirements for the Eligibility Letter.*

3 Project Summary table

Title section	
Name of scheme	Branxton BESS Collector Substation SPT-RI-3148
Investment driver	Load (Local Enabling (Entry) - atypical connection[1] demand connection enabling works
Solution	To fulfil connection requests for [redacted] and [redacted], it is proposed to install a new 400kV DBB GIS bay at Branxton substation. From here a new 400kV circuit will be installed out to the new shared substation indicatively named Braxbess 400/132kV Collector substation. At this shared substation a 400kV line disconnector will be installed alongside two 400kV transformer circuit breakers and two 400/132kV 360MVA transformers, with each transformer requiring its own 132kV circuit breaker. A 132kV shared busbar will be installed to accommodate the local connections.
PASE Compliance	The proposed substation solution is classified as non-PASE aligned. The PASE Framework does not include a Primary or Variant Option that reflects the agreed connection arrangements underpinning this project, which are based on a customer-requested design variation from the NETS SQSS. It does not include a Primary Option for a 400kV single circuit overhead line connection, nor is it possible to install a continuous OHL circuit between Branxton and the proposed Braxbess Collector Substations. Because of this, the preferred option comprises a shared collector substation connected to Branxton via a single 400 kV underground cable circuit and a simplified substation configuration, avoiding additional infrastructure that would otherwise be required under a PASE-aligned solution. A continuous overhead line route is not feasible due to the need to cross the existing ZS Route 400kV overhead line route and the requirement to facilitate connection into Branxton 400kV substation.

[1] *An atypical connection is a connection which fails the Volume Driver limits*

	The preferred option provides the most proportionate and cost-effective means of meeting the agreed customer connection requirements, avoiding unnecessary infrastructure while reducing project complexity, environmental impacts and overall cost, thereby delivering long-term value for GB consumers.
Spend Apportionment (£m)	
RIIO-ET2	£1.80m
RIIO-ET3	£45.58m
RIIO-ET4	£0.00m
Beyond RIIO-ET4 (>2035/36)	£0.00m

4 Need Case

4.1 Eligibility

This Eligibility Letter application sets out SPT's proposal to install a new 400kV GIS bay at Branxton substation to accommodate the connection of two battery storage connections, from where a new 400kV circuit using underground cable (approximately 2.15km) will be installed to the new shared substation indicatively named Braxbess 400/132kV Collector substation. At this substation a 400kV line disconnector will be installed alongside two 400kV transformer circuit breakers and two 400/132kV 360MVA transformers, with each transformer requiring its own 132kV metering circuit breaker. A 132kV busbar will also be installed to accommodate the local connections.

The individual works comprising Transmission Connection Assets for the [redacted] and [redacted] are not included in the scope of this eligibility letter.

This eligibility letter is submitted in accordance with Licence Special Condition (LSpC) 3.18.6 and relates specifically to the following activity as per section 1.5 of the Load Re-opener Guidance and Submission Requirements Document:

"The types of projects ETOs may bring forward include:

- *Atypical generation or demand connection projects whose forecast costs fall outside the thresholds set for the volume driver mechanisms (Special Conditions 3.11 and 3.12) and is greater than £40m.*

Applying the RIIO-T3 Generation Connections Volume Driver Uncertainty Mechanism (VDUM) to this project results in the estimated total project cost [redacted] being [redacted] allowance provided by the VDUM. A Load Re-opener application is therefore required. The allowance calculation supporting this assessment is provided in Appendix 1.

4.2 Preferred Project Track

The solution outlined in this eligibility letter is not PASE aligned, however it is still expected that this project should follow Track 2 as justified within section 4.2.1.

4.2.1 Non-PASE Option justification

The preferred substation solution is not aligned with the PASE Primary Option, which would typically comprise a double busbar substation arrangement, or any of the Variant Options included within the PASE Framework. However, SPT considers the proposed design to be the most efficient, economic and coordinated solution for both the connecting customers and GB consumers, taking account of the requested connection requirements, site-specific constraints, and whole-life cost considerations.

The primary driver for adopting a non-PASE solution is that the connection arrangements underpinning this project are based on a design variation request from the NETS SQSS Chapter 2 which the Users requested within their relevant applications, specifically Chapter 2 Section 2.16.22.

Given both Users have stated a design variation the installation of two circuits and a double busbar solution at the collector substation, which would align with the PASE primary option and would be the solution driven by the SQSS for a new generation connection, is not required and as such a single circuit connection to Branxton is proposed as well as a simplified busbar arrangement at the Braxbess Collector substation.

In addition, a PASE-aligned solution would require the construction of two new 400kV bays at Branxton Substation to facilitate a double busbar arrangement. The single 400kV bay required for the proposed connection arrangement was already incorporated within the original Branxton substation design and therefore does not require any further extension of the existing substation footprint. In contrast, additional bays required to facilitate a double circuit solution would require the GIS installation to be extended beyond what is currently planned. In this case, the benefits associated with a double busbar configuration at the collector substation are not considered sufficient to justify the additional infrastructure investment.

[2] *NETS SQSS Chapter 2 Section 16.2 - NETS SQSS*

Consequently, the additional infrastructure associated with a PASE-aligned solution would increase project costs without delivering a commensurate improvement in network capability, connection availability, or customer benefit as well as increase the costs associated with the shared infrastructure project. It would also not be aligned with the request made by the Users in their applications.

The proposed solution for the substation therefore represents a proportionate approach which aligns with the requested and agreed connection requirements while avoiding unnecessary expenditure that would ultimately be borne by GB consumers through transmission charges. Similar arrangements have previously been adopted elsewhere on the SPT network for customer connections where developers have requested and accepted comparable design variations from standard SQSS requirements.

Furthermore, the use of a 400 kV underground cable connection, as opposed to an overhead line represents the most practical and cost-effective method of connecting the proposed collector substation. Due to the geography of the area, and the existing environmental and technical constraints both surrounding Branxton Substation and between Branxton Substation and the Braxbess Collector Substation location, a continuous overhead line solution is not possible, and so a circuit involving an overhead line would require multiple cable sections to both facilitate entry into Branxton Substation and to enable the crossing of the existing ZS Route 400 kV overhead line. As a result, a fully underground cable solution provides the most economic and efficient means of achieving the required network configuration while minimising additional infrastructure, cost and environmental impacts.

Overall, while the preferred option departs from the PASE Primary Options for new circuits currently included within the PASE framework (noting that the framework does not include a PASE primary option for 400kV single circuit overhead lines), it aligns with the Variant option and represents the most efficient whole-life cost solution, satisfies the requested and agreed customer connection requirements, and avoids infrastructure investment that would provide limited additional value. SPT therefore considers the proposed solution to deliver the most economic, efficient and co-ordinated solution for GB consumers while maintaining compliance with the agreed connection arrangements.

4.3 Outputs and Delivery Year

It is proposed that the associated Price Control Deliverable (PCD) is defined as follows:

Table 4 – Regulatory Output PCD

OSR	Scheme Name	Output	Delivery Date
SPT201074	Branxton BESS Collector Substation	Construction of the 400/132kV Braxbess Collector Substation and underground cable connection to Branxton 400kV Substation	[redacted] May 2029

The delivery year has been based on the current contracted position for both connections and may change subject to the outcome of connections reform.

SPT supports strong accountability for the delivery of Load Re-opener projects. However, PCD dates and LO dates serve different regulatory purposes and should not be treated as interchangeable. The PCD dates proposed in this submission are at an early stage of development to support funding accountability and to enable Ofgem to assess delivery against approved project outputs. The PCD calculation is not designed to establish licence compliance obligations for project delivery dates. PCD dates proposed through the Load Re-opener should not automatically become LO dates; appendix one of Special Condition 3.18 should be amended to distinguish between the two regulatory mechanisms (as recognised by Ofgem in licence condition 3.19.5 and 3.21.5).

The indicative lead asset outputs are identified in Table 5 below. These outputs will be refined as the project matures and will be confirmed at Project Assessment stage.

Table 5: Regulatory Outputs Table (Volumes)

Asset Category	Asset Sub-Category Primary	Voltage	Intervention	Forecast Additions	Forecast Disposals
Branxton 400kV Substation					
Circuit Breaker	CB (Gas Insulated Busbar) (ID)	400kV	Addition	1	0
Braxbess Collector Substation:					
Circuit Breaker	CB (Air Insulated Busbar)	400kV	Addition	2	0
Wound Plant	Transformer	400kV<500MVA	Addition	2	0
Branxton S/S to Braxbess Collector Substation:					
Cable	Circuit Cable - 1 core per phase	400kV	Addition	2.15km	0

4.4 Justification of Project Need

SPT received two applications for BESS connections in close proximity to Branxton Substation. The first being [redacted] with a capacity of [redacted] and the latter being [redacted] with a capacity of [redacted]. These

connections were applied to the NESO and SPT under separate legal entities therefore classifying the associated reinforcement works as H1 Shared works. Following the initially contracted connection agreements, a modification application was received requesting a change to the point of connection. To facilitate this change, it was proposed that both BESS developments connect to a shared collector substation, Braxbess Collector, which would then be connected into Branxton substation via 2.15km of underground cable.

The works stated in this eligibility letter are necessary to facilitate the contracted BESS connections within the Branxton area.

The project meets the eligibility requirements for a Load Re-opener submission, as it:

- is driven by quantifiable increases in contracted generation capacity and associated power flows.
- is required to maintain compliance with statutory and licence obligations, including system security standards.
- enables the efficient and timely connection of low-carbon generation; and
- could not reasonably have been included within baseline allowances due to uncertainty in project timing, scope, and connection uptake at the point of price control determination.

4.4.1 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 is required 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.

4.4.2 Key Project Drivers.

In June 2019, the UK parliament passed legislation introducing a binding target to reach net zero greenhouse gas emissions by 2050. In Scotland, the Scottish Parliament has committed Scotland to becoming a net-zero society by 2045. The timely connection of low carbon generation, such as onshore wind, will play a vital role in reaching these legislated net zero targets.

Further commitments, by the UK Government in October 2021, to decarbonise the power system by 2035, support the requirement for investment in the existing electricity transmission system to enable the timely connection and integration of the required renewable generation sources. In December 2022 the Scottish Government published its Onshore Wind Policy Statement, setting out its ambition to deploy 20GW of onshore wind capacity by 2030.

In December 2024, the UK Government published its Clean Power 2030 Action Plan setting out the strategic objective to deliver a predominantly clean electricity system by 2030. The plan was informed by NESO, who identified the generation, network and flexibility required to achieve the target. In April 2025, UK Government then re-published the Connections Reform Annex, which defined the technology capacity ranges and regional requirements to align Connections Reform with CP2030 delivery.

Connections Reform:

In recognition of the scale of the new connections queue in Great Britain, coupled with commitments to the Clean Power 2030 (CP2030) plan, the connections process has been reformed to move from a 'first come, first served' system to a 'first ready, first connected' system. Based on generation levels as identified as required in CP2030, all new generation connections have been reordered based on their technology and readiness to connect, with the process now underway to reassess and reissue all connections agreements based on the newly establish queue. Both of the new BESS connections which are driving the works detailed in this paper

have been identified as Gate 2, Phase 2 with Clause 2a protection. Meeting the Gate 2 criteria and obtaining Cause 2a protection means that both developments have demonstrated a level of readiness, in ensuring land rights and having obtained planning consents. As Phase 2 developments however, the projects were not identified as required to meet the Clean Power 2030 action plan and are therefore to be considered within the background for 2035.

As it stands, both batteries have contracted connection dates of May 2029, which is subject of review following completion of Phase 2 offers, which at the time of writing is underway. Ahead of the completion of this review, we will continue to drive at the most ambitious connection date possible for these connecting parties, particularly within the hard boundary of our contractual position.

Strategic Spatial Energy Plan (SSEP):

NESO is currently developing the first SSEP, which will act as a blueprint for the future of the GB energy system, building on Connections Reform to optimise electricity and hydrogen generation and storage required to achieve Net Zero by 2050. The SSEP will be a zonal planning tool, providing future generation and BESS requirements at an aggregated level, rather than identifying specific developments. It is anticipated a draft SSEP will be consulted on in early 2027, with the final plan published in Autumn 2027. Although the outcomes of the SSEP are currently unknown, it has been made clear by NESO that the plan is not created to displace specific generation projects – where projects are ready and able to connect these will continue to do so, supporting electrification across GB. As such, the projects requiring the reinforcement identified in this paper will continue to be offered the most ambitious connection date.

4.4.3 Branxton to Braxbess 400/132kV Collector - Background

In 2022 SPT submitted an MSIP Re-Opener application to Ofgem, outlining plans to establish the new 400kV Branxton Substation in East Lothian. The main aims of the Branxton substation development were:

- Enable the timely and co-ordinated connection of the proposed 2000MW Eastern HVDC Link (EGL1).
- Prepare the network for significant offshore wind generation from the North Sea, including the [redacted] contracted [redacted]
- Prepare the network for the closure of Torness Power Station and the subsequent decommissioning of the Torness 400kV substation.
- Eliminate thermal bottlenecks due to the capability of the original 400kV cable systems at Torness.

Since the initial submission of the Branxton 400kV Substation project, five further connections have become contracted to connect via Branxton in addition to the [redacted]. These additional connections were captured

within the MSIP Stage 2 Re-opener application[3], approved by Ofgem in December 2025 and are outlined in Table 6 below:

Table 6 - Contracted Generation at Branxton 400kV Substation

Contracted Development	TOCO Reference	Consent Status	Contracted Generation (MW)	Contracted Energisation Date
[redacted]				
CONTRACTED GENERATION TOTAL			**4493.22**	

Of the entries noted in the table above, it is [redacted] which underpin the requirement for the SPT-RI-3148 project, which is the topic of this letter. The following outlines how SPT-RI-3148 came to being required via these BESS projects.

SPT received two separate applications for BESS connections located in close proximity to Branxton 400kV Substation. The first of these applications to be contracted was the [redacted] connection, which requested a TEC of [redacted] and a Point of Connection voltage of 132kV. The initial site the developer had identified was directly next to Branxton Substation. As part of the connection offer that was issued the installation of a 400kV double busbar bay at Branxton, a short 400kV cable and then installation of 400/132kV SGTs and 132kV metering circuit breakers was specified. These circuit breakers would form the Point of Connection (PoC) between SPT and the User.

A second, separate project, [redacted] applied from the same location seeking a connection into Branxton Substation. A revised solution to accommodate both connections was created and issued to accommodate both projects across two 400/132kV SGTs, a single cable circuit back to Branxton and a single 400kV double busbar bay. These are the works which form the scope of SPT-RI-3148.

In 2024, the developer submitted Modification Applications (Mod Apps) for both projects to move their PoCs to an alternative location, requiring a redesign of the route between Branxton and the remote end collector substation. The works at Branxton and the works at the remote end substation were unchanged as part of this. The circuit between the two sites increases from circa 400m to circa 2.15km

[3] *Banxton MSIP Reopener Stage 2 - Redacted*

owing to the alternative location identified and requested by both connecting parties.

During the process of identifying and evaluating options for each connection offer, due regard has been given to the development of an efficient, co-ordinated, and economical system of electricity transmission. As well as determining the most appropriate connection location, the most appropriate method of connection (e.g. overhead line, underground cable, wood pole vs. steel tower, connection voltage etc.) has also been considered.

The system requirements and design parameters of the proposed works are summarised in Table 8.

4.5 Project Benefits

The proposed project will facilitate the connection of up to [redacted] of contracted Battery Energy Storage System (BESS) capacity at Branxton, supporting the integration of flexible low-carbon technologies and contributing to the efficient operation of the electricity system.

The preferred solution has been developed to meet the agreed customer connection requirements while minimising the amount of new transmission infrastructure required. By adopting a shared collector substation arrangement and a single 400 kV underground cable connection to Branxton Substation, the project avoids the duplication of assets that would be required under alternative solutions, thereby reducing overall capital expenditure and limiting future operation and maintenance requirements.

The proposed design also delivers environmental and community benefits by reducing the extent of new overhead line infrastructure and associated support structures. This reduces visual impacts on the surrounding area and minimises the requirement for additional land and infrastructure interfaces when compared with alternative options considered during the optioneering process.

The project provides an efficient and coordinated approach to the connection of multiple customers through the use of shared transmission infrastructure. This approach optimises the utilisation of network assets, reduces the overall cost of connection infrastructure, and delivers improved value for GB consumers relative to solutions requiring separate connection arrangements.

In addition, the preferred option supports timely delivery of the contracted customer connections while maintaining a simplified network configuration. By reducing engineering complexity and the number of transmission assets required, the solution improves deliverability and reduces construction, operational and maintenance risks over the asset life.

Overall, the preferred option represents the most economic, efficient and coordinated means of meeting the identified connection requirements, delivering

long-term value for consumers while supporting the continued development and operation of a secure, reliable and flexible electricity transmission network.

4.6 Interactive Projects

The delivery of the Branxton 400kV Substation project (SPT-RI-124), which was approved through SPT's RIIO-T2 MSIP submission to Ofgem, is a key dependency for the delivery of SPT-RI-3148. The Branxton development provides the strategic transmission infrastructure required to facilitate both existing and future connections in the area, including the connection arrangements proposed for the [redacted] developments.

As part of the original Branxton substation design, provision was made for a dedicated 400kV feeder bay to accommodate these connections. Accordingly, the 400kV SF_6-Free GIS bay required for SPT-RI-3148 was procured alongside the wider Branxton substation GIS equipment package, enabling procurement and delivery efficiencies to be realised across both projects. Whilst the equipment was procured through the Branxton delivery programme, the associated costs are attributed to and funded through SPT-RI-3148, as the bay is required specifically to facilitate the connection of the [redacted] developments.

The delivery of this project is therefore dependent on the successful completion and energisation of the Branxton 400kV Substation.

4.7 Economic Benefits

Whilst this is not a fully PASE aligned solution, this project delivers an efficient solution which supports whole-life cost optimisation and minimises delivery and implementation risk. It is expected to deliver long-term consumer value while supporting the transition to a cleaner and more flexible electricity system.

4.7.1 Social Value

SPT's approach to social value and a just transition is grounded in its statutory duties and the regulatory framework governing GB network companies. Under the Electricity Act 1989, SPT is required to '*develop and maintain an efficient, coordinated and economical transmission system while facilitating competition and protecting consumer interests*' which includes broader environmental and social outcomes.

SPT embeds social value systematically across its activities, aligning with both regulatory expectations and industry best practice. This includes implementing a structured Supply Chain Sustainability Framework that integrates Environment, Social and Governance (ESG) requirements into procurement and contract management, supported by supplier expectations on ethical employment, modern slavery compliance and fair work principles. A dedicated Just Transition Steering

Group provides oversight to ensure investments are delivered in a fair, inclusive and community-focused way, consistent with UK Just Transition principles.

At a local level, SPT delivers social outcomes through Science, Technology, Engineering and Mathematics (STEM) outreach, apprenticeships and graduate programmes, volunteering and charitable initiatives, and targeted Small and Medium-sized Enterprise (SME) engagement to support regional economic growth and local participation in the supply chain.

These activities are complemented by requirements on health and safety, circular economy practices, equality, diversity and inclusion, and ongoing stakeholder collaboration through supplier forums and public sustainability reporting.

Accordingly, SPT's load-related investments during RIIO-T3 are not only technically necessary interventions but are designed to deliver measurable, reportable social value in line with Ofgem's RIIO-T2 and RIIO-T3 outputs, public Procurement Policy Note (PPN) 06/20, and wider ESG expectations. By embedding these practices into project delivery, SPT ensures that network reinforcement supports a fair and inclusive transition to net zero, delivers benefits to local communities and supply chains, and provides enduring value for consumers.

- **Community Benefits:**

SPT projects delivering new infrastructure will attract a sum of Community Benefits funding proportional to the new works carried out.

As detailed in 6.1, project works involve the construction of a new collector substation, therefore attracting a total of £0.530 m of Community Benefits, which will be funded separately from the project. Community benefit funding is provided by the SP Energy Networks Community Benefit Team, with grants paid directly to eligible communities. In line with UK Government (DESNZ) guidance, the costs of delivering these funds, including grants and administration, will then be recovered through Ofgem's regulated transmission price control framework, subject to compliance with the approved guidance and reporting requirements.

In delivering our community Benefit Strategy we are committed to align with UK Government Guidance, ensuring our approach reflects the core principles of fairness, transparency, flexibility, and meaningful community empowerment.

Our Community Benefit engagement approach ensures eligible communities are aware of funding opportunities, can access support, and have meaningful input into funding priorities. Engagement begins 3 to 6 months before asset construction, ensuring communities receive the most up-to-date and accurate information.

We work with local authorities, community councils, voluntary organisations, community planning partners and other trusted networks to reach a broad range of groups, including those that may face barriers to accessing funding. Opportunities are promoted through multiple channels, including project communications, online platforms, social media, community events, webinars and stakeholder meetings,

with targeted engagement undertaken where appropriate to understand local needs and priorities.

- **Bill Discount:**

Following the introduction by the Department for Energy Security and Net Zero (DESNZ) of the Bill Discount Scheme, eligible households located within 500 metres of new or significantly upgraded electricity transmission infrastructure will be entitled to receive a discount of up to £250 per year on their electricity bills for up to 10 years. While the underground cable of the proposed works is not eligible under the current scheme arrangements, the new collector substation at Branxton would be expected to constitute eligible infrastructure. On this basis, qualifying properties within 500 metres of the development would be expected to benefit from the scheme, providing a direct and tangible financial benefit to the local community hosting this new transmission infrastructure. The scheme is intended to ensure that communities living closest to nationally important new transmission infrastructure share directly in the benefits associated with its development

5 Optioneering

This section provides a description of the various alternative options that were considered to accommodate connection of renewable generation developments in the Scottish Borders area. A summary of each option is described in Table 7. Also, the system requirements and design parameters for the considered options are summarised in Table 8.

Our optioneering approach has identified Whole System interactions with other electricity network /system operators in the development of our proposed solution and has considered the appropriate Whole System outcome.

The options assessed include a 'Do Nothing' option and a number of alternative options to establish the Braxbess Collector substation and connecting circuits.

5.1 Existing System Configuration

Branxton 400kV substation is currently under construction in southeast Scotland and will connect to the Eccles, Strathaven, Torness and Crystal Rig 400kV circuits.

Branxton is a 22-bay 400kV Gas Insulated Switchgear (GIS) substation comprised of the following bays:

- Six 400kV bays associated with the diverted transmission circuits
- Four 400kV bus-sections
- Three 400kV bus-couplers
- Four 400kV bays for [redacted]
- Two 400kV bays for the EGL1 HVDC connection

- One 400kV bay for [redacted]
- One 400kV bay for SPT-RI-3148 ([redacted])
- One 400kV bay for SPT-RI-2973 ([redacted])

Branxton 400kV Substation has been developed as a dedicated collector substation to facilitate new connections in this area. With that in mind, the busbar arrangement at Branxton has space allocated for future bays to be connected to, meaning that future connection capability is available at Branxton substation. This represents a futureproof system.

A single line diagram of Branxton 400kV Substation, with the spare bays noted in grey, and the surrounding connections is shown below in Figure 1.



Figure 1: Branxton 400kV Single Line Diagram

Branxton 400kV substation was approved by Ofgem via a RIIO-T2 MSIP submission[4] in December 2025, which included the dedicated feeder bay required to accommodate the connection proposed within this Eligibility Letter. Whilst the provision of the bay was included within the Branxton substation design, the cost associated with the bay, including installation and commissioning, will be funded through this project.

5.2 Overview of Options

This section provides a description of each reinforcement option and details the key considerations. A summary of each option is described at the end of this section in Table 7, while the system requirements and design parameters for the considered options are outlined in Table 8 within Section 5.3.

Section 4.2.1 provides a justification for the preferred option departing from the PASE Primary and Variant Options. The connection agreements underpinning this reinforcement project contain, at the User's request, design variations from SQSS requirements, meaning that the design does not require two circuits between Branxton Substation and Braxbess Collector Substation or a double busbar configuration at Braxbess Collector Substation. As a result, the options considered in detail in this section reflect this request and avoid additional infrastructure investment that would deliver limited additional value.

5.2.1 Option 1 – Do Nothing or defer

A 'Do Nothing' or 'Defer' option is not viable for this project and would be inconsistent with SPT's statutory duties and licence obligations, including Licence Conditions D3 and D4A. These require SPT to comply with the NETS SQSS and to offer to enter into an agreement with the system operator upon receipt of an application for connection, in line with the System Operator Transmission Owner Code (STC) and the associated Construction Planning Assumptions provided by NESO. The proposed works are Enabling Works in the connection agreements relating to the projects in Table 7.

5.2.2 Option 2 – Braxbess 400/132kV collector substation to Branxton 400kV via underground cable

This option proposes the installation of a new 400kV GIS bay at Branxton substation to accommodate the connection of the two contracted BESS developments. From the new feeder bay, a single 400kV underground cable circuit

[4] *Banxton MSIP Reopener Stage 2 - Redacted*

would be installed between Branxton substation and the proposed Braxbess 400/132kV collector substation.

At the collector substation, a 400kV line disconnector would be installed on the incoming cable circuit, together with two 400kV transformer circuit breakers and two 400/132kV 360MVA transformers. Each transformer would be connected to a 132kV busbar onto which three separate 132kV metering circuit breakers would be connected with two serving the [redacted]These metering circuit breakers would provide the individual customer Points of Connection. The proposed arrangement creates a shared solution between the two BESS connections who are in neighbouring land parcels.

The 400kV GIS bay at Branxton has already been procured as part of the wider Branxton substation project and is therefore available to support the proposed connection arrangement.

The connection has been designed in line with the connection security request received from both BESS developers whereby they stated a design variation from the SQSS meaning a single circuit has been proposed with both BESS connections being connected via two 400/132kV 360MVA transformers. A Load Management Scheme is proposed such that for the loss of a transformer a trip signal would be sent to the noted circuit breakers to avoid an overload on the remaining in-service transformer.

The total cost of Option 2 is £47.38m, including [redacted] associated risk.

Figure 2 below shows the single line diagram for this arrangement:

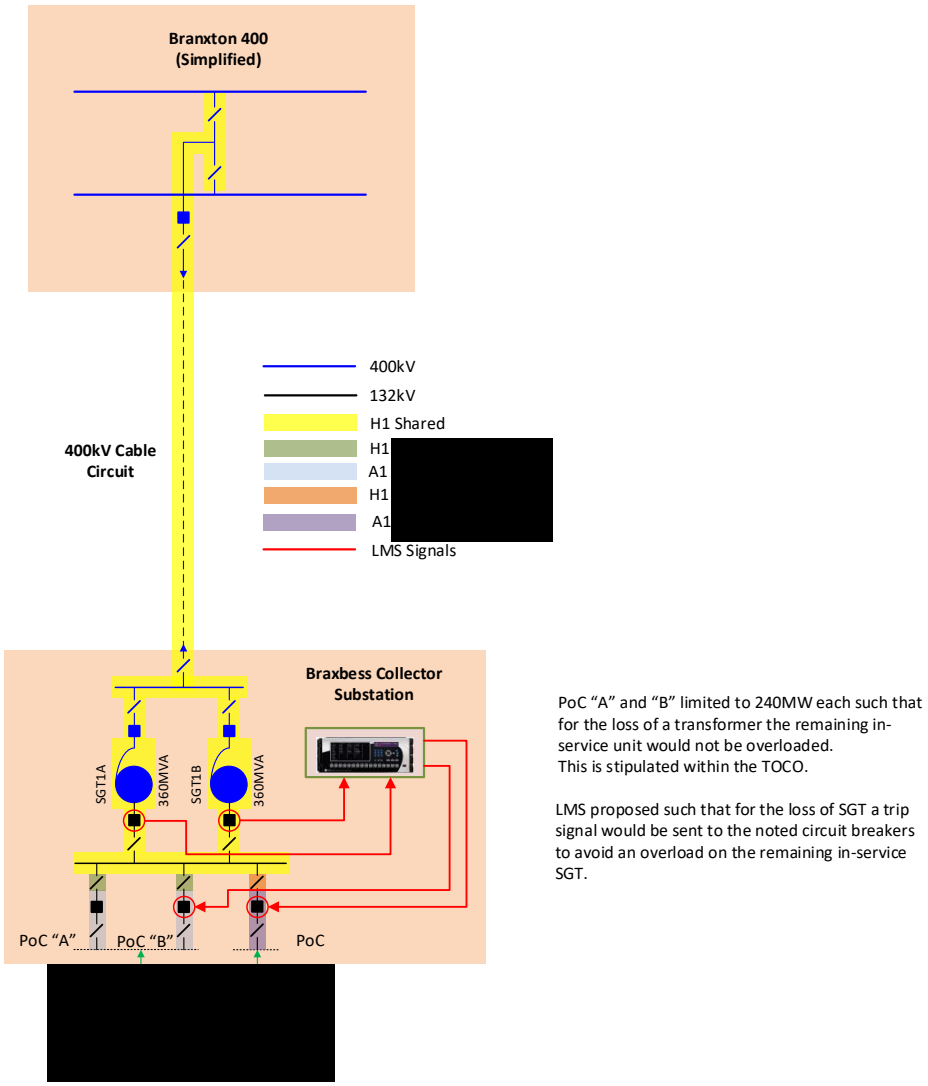


Figure 2: Indicative connection arrangement for Braxbess 400/132kV collector substation to Branxton 400kV via underground cable.

This proposed option aligns with both Users requested, and agreed, connection configuration, minimises capital and whole-life costs, reduces engineering complexity and environmental impacts, and makes efficient use of infrastructure already incorporated within the Branxton Substation development. It therefore provides the best overall value for GB consumers while facilitating the timely connection of both contracted developments.

Futureproofing of this connection would be provided via Branxton 400kV substation, as explained within section 5.1.

5.2.3 Option 3 – Braxbess 400/132kV Collector Substation to Branxton 400kV via Overhead Line

This option is electrically the same as the solution outlined in Section 5.2.2 however this proposes to connect the Braxbess 400/132kV collector substation to Branxton via a 400kV overhead line (OHL), where possible, rather than a fully underground cable circuit. The cost of this option is £51.08m including [redacted] associated risk.

Given SPT's licence obligations, as outlined in Section 4.4.1, it is required to develop the most economic, coordinated and efficient solution for the relevant project and, generally, an overhead line circuit is more economical than an underground cable circuit.

An OHL solution was evaluated in this instance, however, the construction of a fully OHL solution is constrained by local site conditions. A section of 400kV underground cable would still be required to facilitate the connection into Branxton substation and to cross under the existing ZS Route 400kV overhead line.

The mixed OHL and underground cable arrangement would also require additional transition infrastructure, including cable sealing ends and an associated compound. This would increase the overall project footprint, design complexity, consenting requirements and future operation and maintenance requirements when compared with a fully underground cable solution

Although technically feasible, this solution has a higher overall cost than the preferred Option 2, primarily attributable to the short section of cable and the required cable sealing end compound. As a result, this option has been discounted as it would introduce greater complexity, environmental impacts and consenting risks without providing a proportionate cost or delivery benefit over the fully underground cable solution proposed under Option 2.

Figure 3 below shows the single line diagram for this proposal.

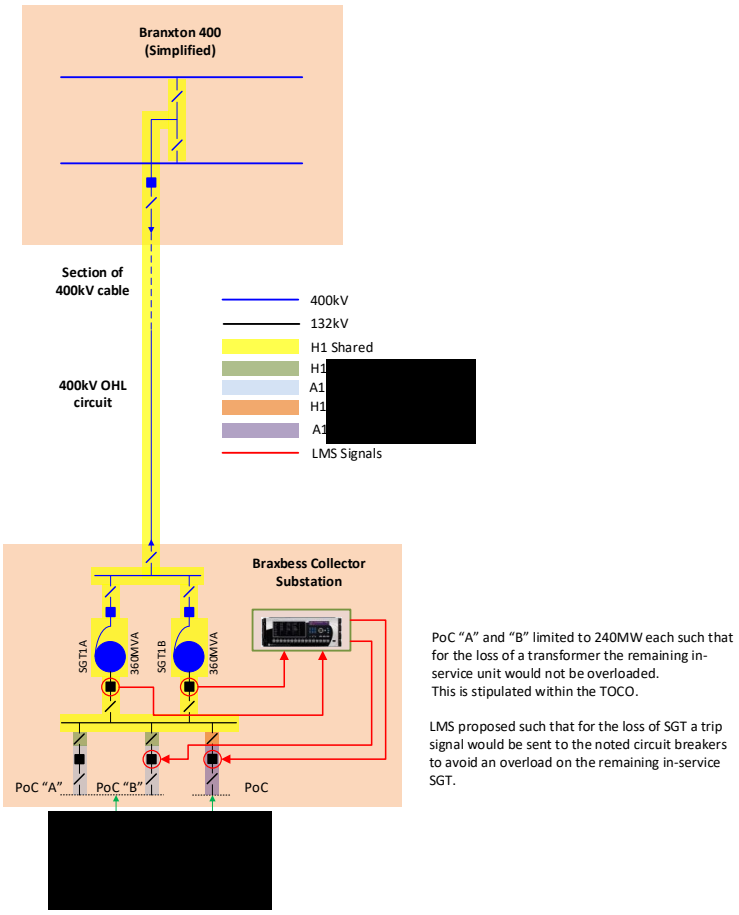


Figure 3: Indicative connection arrangement for Braxbess 400/132kV collector substation to Branxton 400kV via OHL.

5.2.4 Option 4 - [redacted] 400/132kV substation and [redacted] 400/132kV substation to Branxton 400kV

This option would provide separate transmission connection arrangements for the [redacted] developments. Two separate 400/132kV substations would be established, with each substation serving one User. Each customer substation would be connected to Branxton 400kV substation through a dedicated 400kV circuit and a separate 400kV feeder bay. The route and circuit technology for each connection's circuit would be subject to further analysis and could comprise underground cable or a combination of underground cable and OHL, depending on the applicable routeing and site constraints, taking into account the requirement to identify a double circuit route, rather than the single circuit route outlined in Option 2.

Figure 4 below shows the single line diagram for this proposal.

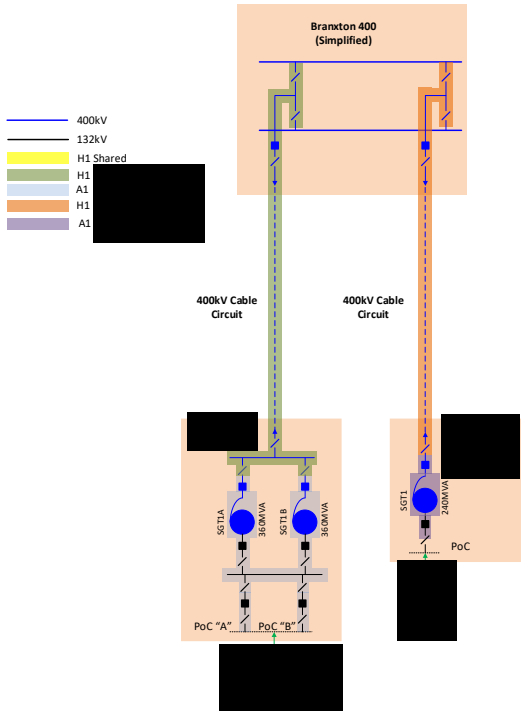


Figure 4: Indicative connection arrangement [redacted] 400/132kV substation and [redacted] 400/132kV substation to Branxton 400kV.

The option would also require extending Branxton 400kV substation to accommodate an additional 400kV feeder bay compared with the single feeder bay required for the shared collector solution. The duplicated connection circuits, substation platforms, switching equipment, protection and control systems, and other associated civil works are expected to materially increase the capital and whole-life costs of connecting both developments.

Given that the two BESS developments are geographically close and connect at the same voltage level to the same transmission node, combining their common connection requirements through shared-use infrastructure provides a more coordinated and efficient long-term solution. It reduces the duplication of transmission assets and the overall cost to consumers. The shared-use arrangement also reduces the extent of customer-specific infrastructure that could become underutilised or stranded if either BESS development is delayed or does not proceed.

Additionally, the Users have specifically requested a coordinated joint connection arrangement as reflected in their Bilateral Connection Agreements (the applications were made under separate legal entities). The agreed arrangement enables the common connection infrastructure to be delivered as shared-use works while retaining separate customer Points of Connection. Option 4 would not align with the current requested and agreed connection arrangement.

Therefore, this option has been discounted in advance of detailed design and cost estimation due to initial cost estimation indicating materially higher costs but with

no commensurate benefit. It would replace the agreed shared-use solution with duplicated customer-specific infrastructure, require an additional feeder bay at Branxton, increase the risk of customer-specific assets becoming underutilised or stranded, and materially increase the expected overall cost without delivering a proportionate benefit relative to the preferred shared collector solution.

5.2.5 Option 5 - Braxbess 400/132kV collector substation to tee-off point on ZS route 400kV OHL

This option would retain the proposed shared Braxbess 400/132kV collector substation but would connect it to the existing ZS 400kV overhead line rather than to a dedicated 400kV feeder bay at Branxton 400kV substation. This option is considered due to the proximity of the proposed collector substation location to the existing ZS Route OHL.

Under this arrangement, a tee-off connection would be established at a suitable location on the ZS route, with a new 400 kV connection extending from the tee point to the Braxbess Collector Substation. The collector substation would comprise the same principal equipment as described under Option 2. The indicative electrical arrangement is shown in Figure 5.

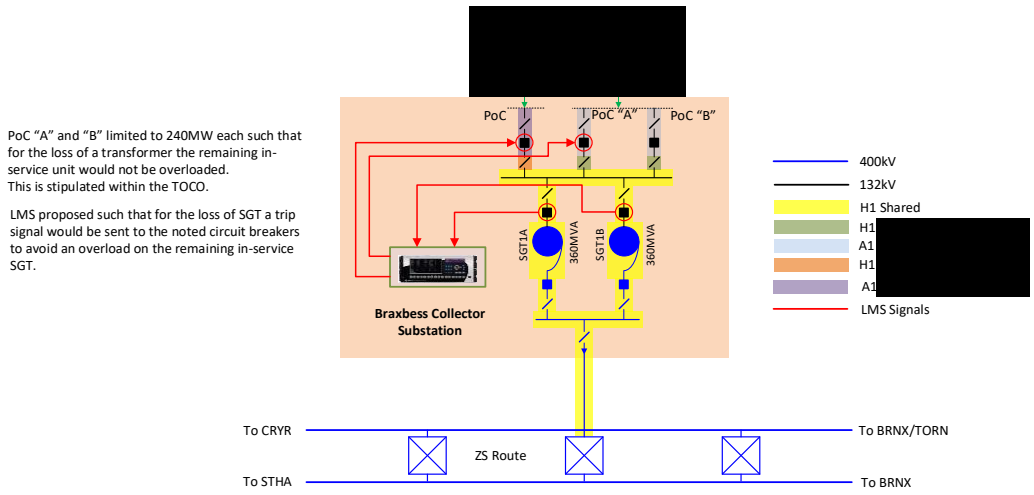


Figure 5: Indicative connection arrangement for Braxbess 400/132kV Collector substation to tee-off point on ZS Route.

However the proposed connectivity shown in Figure 5 is not feasible as the number of circuit ends created would exceed SPT's Design Policy for the Complexity of Transmission Circuits, which has been created in conjunction with guidance outlined with the NETS SQSS, specifically Appendix B. Connecting the Braxbess Collector into ZS Route would create a four-ended 400kV circuit arrangement, with circuit ends at Crystal Rig 400kV substation, at the proposed Braxbess Collector substation, at Branxton substation and at Torness substation. The circuit complexity rules are informed by the feasible protection arrangements which cannot be practically achieved while achieving the 400kV target fault clearance

time of 80ms. Additionally, this arrangement is considered to be too onerous for switching, isolating and earthing to take place across these sites for maintenance activities.

The option would also require intervention on an existing transmission circuit and the establishment of new connection infrastructure on the ZS Route, increasing design complexity and delivery risk when compared with a dedicated connection to Branxton.

Consequently, this option has been discounted in advance of a detailed design and cost-estimating exercise. The proposed arrangement does not provide an acceptable operational configuration and would introduce additional complexity without delivering sufficient benefits when compared with the preferred Option 2.

5.2.6 Option 6 - Double busbar collector substation off ZS Route to Branxton 400kV

Building on the arrangement considered under Option 5, this option would establish a new 400 kV double busbar substation in the vicinity of the proposed BESS developments. The existing ZS Route circuit (Crystal Rig to Branxton/Torness) would be turned in and out of the new substation, rather than the Braxbess Collector Substation being connected to the circuit through a tee connection. This arrangement would avoid the four-ended circuit configuration identified under Option 5 and would be consistent with SPT's design policy and the applicable NETS SQSS requirements. The indicative electrical configuration is shown in Figure 6.

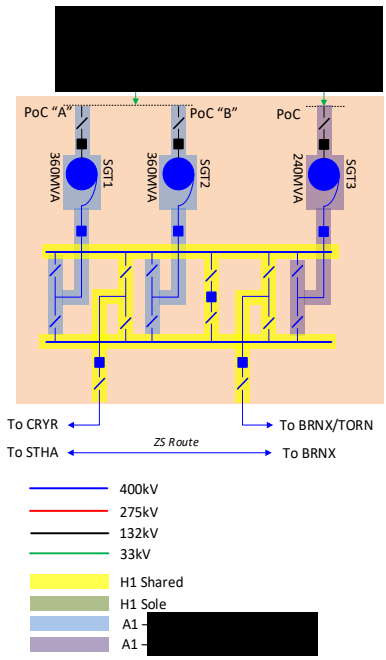


Figure 6: Indicative connection arrangement for Double busbar collector substation off ZS Route to Branxton 400kV

The option would require a new 400 kV double busbar substation, including associated feeder bays, busbar switching equipment, protection and control systems, a substation platform and associated civil works. In addition, the existing ZS Route circuit would require modification and diversion works to facilitate its connection into the new substation.

Whilst technically feasible, this arrangement would introduce substantial additional infrastructure, land requirements, network interfaces and operational complexity when compared with the preferred option. The additional investment could not be justified for the connection of the two BESS developments, particularly as provision has already been incorporated within the design of Branxton 400 kV Substation to accommodate additional connections in the area, including a dedicated feeder bay specifically identified for this project. Furthermore, the option would not provide a proportionate improvement in connection capability or availability compared with the preferred connection to Branxton. Delivery of the option would also be dependent on obtaining outages and system access on the existing ZS Route to undertake the required circuit modifications. Given the strategic importance and utilisation of this circuit, securing the necessary outages could prove challenging and may introduce additional programme risk, increasing the likelihood of delays to the delivery of the customer connections.

Consequently, this option has been discounted in advance of detailed design and cost estimation due to initial cost estimation indicating materially higher costs but with no commensurate benefit. Compared with the preferred option, it would introduce additional infrastructure, complexity and delivery risk without providing commensurate benefits to customers or consumers. Option 2 therefore represents the most economic, efficient and coordinated solution for meeting the agreed connection requirements.

5.2.7 Option 7 - Braxbess 400/132kV double busbar collector substation to Branxton 400kV

This option proposes the installation of a double busbar arrangement at the collector substation together with two separate 400 kV circuits connecting into Branxton substation. The indicative electrical configuration for this option is shown in Figure 7:

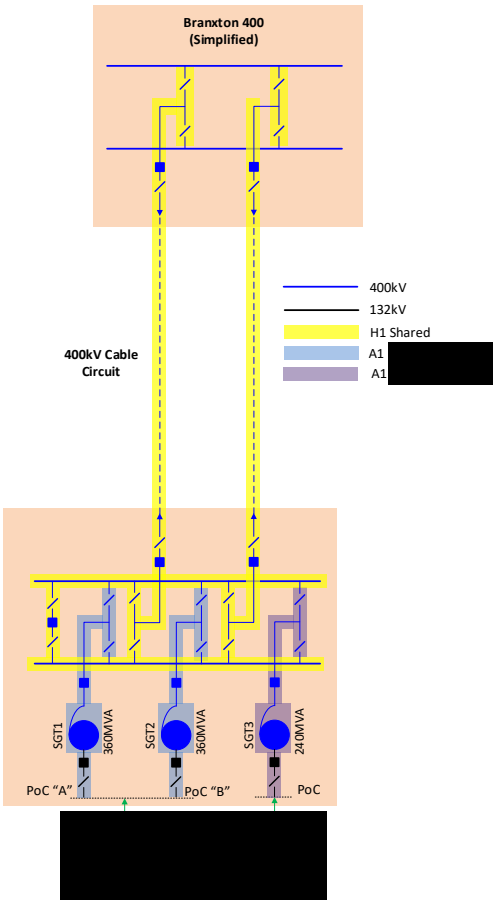


Figure 7: Indicative connection arrangement for Braxbess 400/132kV Collector substation to Branxton.

This option has been included as it proposes a PASE aligned solution for the new substation. However, to facilitate this configuration, the option would require significant additional infrastructure when compared with the preferred solution. In addition to the double busbar arrangement at the collector substation, a second 400 kV cable circuit would be required between Branxton and the collector substation together with an additional 400 kV GIS feeder bay at Branxton. The option would therefore require a larger substation footprint, additional primary plant and protection systems, a second cable route, and more extensive civil engineering works, increasing design complexity and capital and whole-life costs.

Whilst technically feasible, the additional resilience and operational flexibility provided by this arrangement is not required to satisfy the agreed connection arrangements. Both connecting customers requested and accepted a design variation from the NETS SQSS requirements through their connection applications, enabling a non-firm connection arrangement based on a single circuit connection and simplified collector substation configuration.

The preferred Option 2 already provides sufficient capability to accommodate the contracted connections, whilst avoiding the substantial additional infrastructure associated with a double circuit and double busbar configuration. As a result, the

additional investment required under this option would not deliver a commensurate improvement in customer benefit or network capability.

Consequently, this option has been discounted in advance of detailed design and cost estimation due to initial cost estimation indicating materially higher costs but with no commensurate benefit.

5.3 Optioneering Justification

A summary of the options considered is included in Table 7 with their system requirements and design parameters outlined in Table 8.

Table 7 – High-Level Optioneering Summary Table

Options	Map	Layout of Substation/ Connection	Layout of all Route Works	Relevant Survey Works	Narrative Consenting Risks	Narrative Preferred Option	Narrative Rejection
Preferred – Option 2: Connect into Branxton via underground cable	Refer to Figure 8	Refer to figure 2	N/A	N/A	This is a low-moderate risk option as the cable is to be installed under Permitted Development rights and required planning consents have been obtained by the Developer for the collector substation	The preferred arrangement aligns with the Users' requested and agreed connection configuration, minimises capital and whole-life costs, reduces engineering complexity and environmental impacts, and makes efficient use of infrastructure already incorporated within the Branxton Substation development. It therefore provides the best overall value for GB consumers while facilitating the timely connection of both contracted developments.	N/A
Rejected – Option 1: Do Nothing / Defer	N/A	N/A	N/A	N/A	N/A	N/A	It would not facilitate the contracted customer connections and would be inconsistent with SPT's various statutory duties and licence obligations.
Rejected – Option 3: Connect into	N/A	Refer to figure 3	N/A	N/A	This option is a high-risk as it would require Section 37 consent for the construction of the	N/A	Would require a mixed OHL and underground cable solution due to the local route constraints. The additional cable to OHL transition

Options	Map	Layout of Substation/ Connection	Layout of all Route Works	Relevant Survey Works	Narrative Consenting Risks	Narrative Preferred Option	Narrative Rejection
Branxton via Overhead Line					new OHL section and planning permission for the required compounds. The developer has obtained planning rights for the collector substation		infrastructure and interfaces, footprint, and consenting requirements result in greater complexity, environmental impacts, operation and maintenance requirements, risk delivery and costs when compared with solution proposed under Option 2.
Rejected – Option 4: [redacted] 400/132kV substation and [redacted] 400/132kV substation to Branxton 400kV	N/A	Refer to Figure 4	N/A	N/A	This option would require consenting rights for both [redacted] substations and further environmental assessments, increasing consenting risks Cable routes would be allowed under Permitted Development rights.	N/A	Would replace the agreed shared-use connection arrangement with duplicated customer-specific infrastructure, requiring duplicated substations, connections circuits and additional infrastructure at Branxton, materially increasing costs, while providing limited additional benefit, and the risk of stranded assets if either BESS development does not proceed. The option also does not align with the Users' Bilateral Connection Agreements.
Rejected – Option 5: Braxbess 400/132kV collector substation to tee-		Refer to figure 5	N/A	N/A	This option is high- risk as Section 37 consents may be required for the turn-in of the existing OHL Circuit. New planning consents will be also required for the	N/A	The proposed tee connection into the existing ZS Route would create an unacceptable four-ended 400kV circuit configuration that would exceed SPT's Design Policy for the Complexity of Transmission Circuits

Options	Map	Layout of Substation/ Connection	Layout of all Route Works	Relevant Survey Works	Narrative Consenting Risks	Narrative Preferred Option	Narrative Rejection
off point on ZS route 400kV OHL					new S/S, requiring additional environmental assessments.		and would not satisfy the applicable NETS SQSS security requirements.
Rejected Option 6 - Double busbar collector substation off ZS Route to Branxton 400kV		Refer to figure 6	N/A	N/A	This option is high- risk as Section 37 consents may be required for the turn-in of the existing OHL Circuit. New planning consents will be also required for the new S/S, requiring additional environmental assessments.	N/A	Would require a new 400kV double busbar substation and the turn-in of the existing ZS Route circuit, resulting in increased infrastructure, land take, environmental impacts, operational complexity, and outage requirements, which would significantly increase both project cost and delivery risk. Given that suitable provision for this connection has already been incorporated within Branxton Substation, the additional investment does not represent an efficient and coordinated solution.
Rejected – Option 7: Braxbess 400/132kV double busbar collector substation to Branxton 400kV		Refer to figure 7	N/A	N/A	This option is moderate-high risk as new planning consents may be required for the proposed double busbar substation given the increased footprint.	N/A	Would require a double busbar collector substation, two 400 kV cable circuits, and two 400 kV feeder bays at Branxton, which would significantly increase infrastructure requirements, substation footprint, environmental impacts, engineering complexity and project cost, whilst providing additional resilience that is not required under the agreed customer connection arrangements.

Table 8 –System Requirements and Design Parameters for the considered options

SYSTEM DESIGN TABLE	CIRCUIT/ PROJECT	PREFERRED – OPTION 2: CONNECT INTO BRANXTON VIA UNDERGROUND CABLE	REJECTED – OPTION 1: DO NOTHING / DEFER	REJECTED – OPTION 3: CONNECT INTO BRANXTON VIA OHL	REJECTED – OPTION 4: [redacted] 400/132KV SUBSTATION AND [redacted] 400/132KV SUBSTATION TO BRANXTON 400KV	REJECTED – OPTION 5: BRAXBESS 400/132KV COLLECTOR SUBSTATION TO TEE-OFF POINT ON ZS ROUTE 400KV OHL	REJECTED – OPTION 6: DOUBLE BUSBAR COLLECTOR SUBSTATION OFF ZS ROUTE TO BRANXTON 400KV	REJECTED – OPTION 7: BRAXBESS 400/132KV DOUBLE BUSBAR COLLECTOR SUBSTATION TO BRANXTON 400KV
Thermal and Fault Design	Existing Voltage (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	New Voltage	400kV	400kV	400kV	400kV	400kV	400kV	400kV
	Existing Continuous Rating (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	New Continuous Rating	575MVA	N/A	575MVA	575MVA	N/A	N/A	1150MVA
	Existing Fault Rating (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	New Fault Rating	4000A	4000A	4000A	4000A	4000A	4000A	4000A
ESO Dispatchable Services	Existing MVAR Rating (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	New MVAR Rating (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Existing GVA Rating (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	New GVA Rating	N/A	N/A	N/A	N/A	N/A	N/A	N/A
System Requirements	Present Demand (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SYSTEM DESIGN TABLE	CIRCUIT/ PROJECT	**PREFERRED – OPTION 2:** CONNECT INTO BRANXTON VIA UNDERGROUND CABLE	**REJECTED – OPTION 1:** DO NOTHING / DEFER	**REJECTED – OPTION 3:** CONNECT INTO BRANXTON VIA OHL	**REJECTED – OPTION 4:** [redacted] 400/132KV SUBSTATION AND [redacted] 400/132KV SUBSTATION TO BRANXTON 400KV	**REJECTED – OPTION 5:** BRAXBESS 400/132KV COLLECTOR SUBSTATION TO TEE-OFF POINT ON ZS ROUTE 400KV OHL	**REJECTED – OPTION 6:** DOUBLE BUSBAR COLLECTOR SUBSTATION OFF ZS ROUTE TO BRANXTON 400KV	**REJECTED – OPTION 7:** BRAXBESS 400/132KV DOUBLE BUSBAR COLLECTOR SUBSTATION TO BRANXTON 400KV
	2050 Future Demand	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Present Generation (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Future Generation Count	2	N/A	2	2	2	2	2
	Future Generation Capacity	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Initial Design Considerations	Limiting Factor	N/A	It does not enable the most economic and efficient electricity system in the area.	It does not enable the most economic and efficient electricity system in the area.	It does not enable the most economic and efficient electricity system in the area.	It does not enable the most economic and efficient electricity system in the area.	It does not enable the most economic and efficient electricity system in the area.	It does not enable the most economic and efficient electricity system in the area.
	AIS/ GIS	AIS / GIS (Feeder bay at Branxton)	N/A	AIS / GIS (Feeder bay at Branxton)	AIS / GIS (Feeder bay at Branxton)	AIS / GIS (Feeder bay at Branxton)	AIS / GIS	AIS / GIS (2x Feeder bay at Branxton)
	Busbar Design	Single Busbar	N/A	Single Busbar	Single Busbar	Single Busbar	DBB	DBB
	Cable/ OHL/ Mixed	Cable	N/A	Mixed	Cable	OHL	OHL	Cable
	SI	This scheme enables future development of network in the region.	N/A	This scheme enables future development of network in the region.	This scheme enables future development of network in the region.	This scheme enables future development of network in the region.	This scheme enables future development of network in the region.	This scheme enables future development of network in the region.

5.3.1 Whole-Life Cost Analysis (WLCA) & Cost-Benefit Analysis (CBA)

Although not fully PASE aligned, the proposed solution is the optimal solution for the GB consumer, as shown in the optioneering, and is the only viable solution for the customer's requests. As there is no other credible option to the one proposed, a CBA is unsuitable in this instance.

6 Proposed Works

6.1 Project Summary

It is proposed to install a new 400kV GIS bay at Branxton substation to accommodate the connection of the two contracted battery storage connections. From here a new 400kV circuit using underground cable will be installed out to the new shared collector substation. At the shared collector substation, a 400kV line disconnector will be installed alongside two 400kV transformer circuit breakers and two 400/132kV 360MVA transformers. Each transformer will be equipped with its own 132kV circuit breaker. A shared 132kV busbar will also be installed, together with three individual metering circuit breakers; two for the [redacted] development and one for the [redacted] connection.

Figure 8 below shows both the location of the Braxbess Collector substation, which is where the Points of Connections for the two BESS connections will be, and the indicative underground cable route between Branxton and the Braxbess Collector substation.



Figure 8: Indicative 400kV Cable route to User Site

The proposed configuration of the Branxton BESS collector substation is indicated in Figure 9.

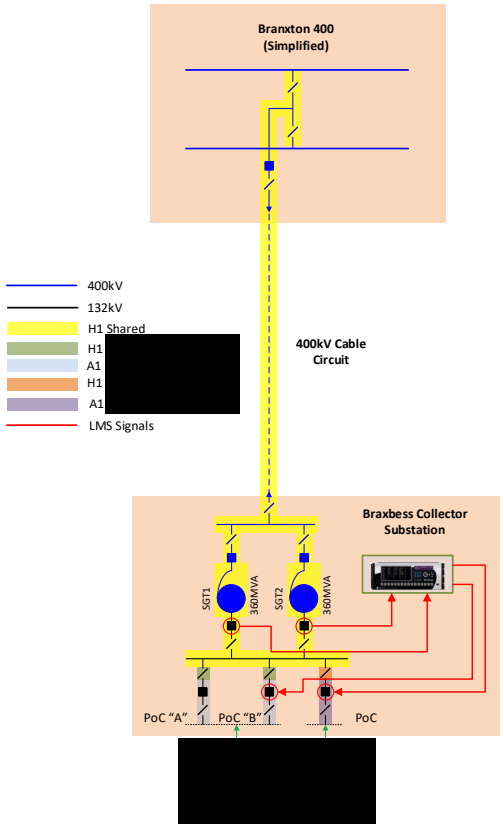


Figure 9: Single line diagram of proposed works

The construction project will be carried out by SPT and will include all works associated with the project elements indicated below.

Branxton Substation works:

Install a new 400kV double bus bar GIS bay at Branxton Substation.

The proposed 400 kV SF_6-Free GIS bay has already been procured as part of the wider Branxton Substation project, enabling procurement and delivery efficiencies to be realised across both schemes. Whilst the equipment has been procured through the wider Branxton project, the costs associated with the bay will be attributed to and funded through this project, as it is required to facilitate the proposed customer connection.

Branxton to Braxbess Collector Substation:

It is proposed to install a 400kV cable circuit between Branxton Substation and the Braxbess Collector substation. The cable circuit will be capable of carrying 758MVA. It is thought that a 2500mm^2 CU XLPE cable operating at 400kV could be used to meet this capacity however this should be confirmed via detailed design. The circuit is circa 2.15km in length and Figure 8 shows the indicative route that has been chosen.

Braxbess Collector Substation:

At the new collector substation, SPT shall establish the new platform as this falls under the scope of works given it is a shared use substation. At the site, it is proposed to install a 400kV line disconnector and two 400kV transformer circuit breakers. These breakers shall provide separation on the circuit for energising purposes.

At this site, it is also required to install two 400/132kV 360MVA transformers alongside two 'LV Transformer' circuit breakers. These circuit breakers will then connect onto a 132kV busbar onto which the three 132kV metering circuit breaker connections will be made. Two of which are for the [redacted] and one for [redacted]. Figure 9 shows the proposed layout of Braxbess Collector S/S.

The substation will require a control building to house the appropriate P&C panels, LVAC equipment, DC supplies etc.

Shared works:

The final element of shared works in the installation of an intertrip scheme such that for the loss of a transformer a trip signal shall be sent to the [redacted] and the [redacted] connection to ensure that the remaining in-service transformer is not overloaded.

The individual works for the [redacted] connections are not included within the scope of this eligibility letter.

6.1.1 Statutory Planning Consents

The cable is to be installed under Permitted Development (PD) Rights. Required planning consents have been obtained by the Developer for the collector substation, approved by the Scottish Government Energy Consents Unit in July 2025.

7 Project Cost Estimate

As agreed with Ofgem, a further Project Assessment submission will be made at the right time relating to the associated amendments to the outputs, delivery date and allowances to be detailed in SpC 3.18 Appendix 1. The detail in this section is therefore indicative pending that further submission.

7.1 Estimate Total Project Cost

An estimated cost of the project, breakdown by asset type and activity has been included in Table 9 below:

Table 9 – Project Cost Breakdown

Item	Description	Estimated Capex (£m 23/24 prices)
[redacted]		
	TOTAL	**47.38**

A cost breakdown into asset possibilities has been included in Appendix 2.

Aligned with the format of the Load Board Pipeline, Table 10 details the expected energisation year and the current view of potential direct capital expenditure. Indirect costs will be recovered via CAI UIOLI. Where applicable, the use of the Advance Procurement Mechanism (APM) will be considered.

Table 10 – Estimated Incidence of Expenditure

Estimated Total Direct Project Cost per year, £m, 23/24 price base								
Energisation Year	**Yr. 25/26**	**Yr. 26/27**	**Yr. 27/28**	**Yr. 28/29**	**Yr. 29/30**	**Yr. 30/31**	**Yr. 31/32**	**Total (£m)**
2029	£1.80	£5.14	£9.49	£27.87	£3.08	-	-	£47.38

Whilst shared infrastructure assets are ultimately funded by GB consumers, ahead of energisation, developers whose connections are identified as dependent on the works underwrite a proportion of the project cost via securities which are retained to cover abortive costs should the developer not progress their project. At the time of writing however, under Connections Reform, NESO have frozen all securities payments by developers ahead of signing their updated offers. As a result, ahead of the affected developers signing their updated offers, GB consumers are exposed to abortive costs. Following the developer's acceptance of the updated Gate 2 offer, all securities and liabilities associated with the offer would be borne by the developer.

In the case of this project, it has been essential that expenditure has been committed ahead of the acceptance of Gate 2 Phase 2 connections contracts to

ensure that we are able to continue to provide the most ambitious connections date possible for the developer. This has included the procurement of lead items to ensure that the supply chain is available to meet the planned dates, and ensure that there is no negative impact on the Branxton 400kV project, into which this project connects. As can be seen from the incidence of expenditure above, this equates to [redacted] to the end of March 2027, with [redacted] of those costs (i.e. [redacted]) already committed prior to the formation of the reformed queue in January 2026 (the development was originally contracted in May 2023)

7.2 Benchmarking

The cost estimate for this project has been developed using SPT's standard approach for estimating the cost of projects which are at this stage of development. This is based on the latest design information available, along with desktop studies and non-intrusive site surveys, incorporating local and site-specific knowledge where this is available. At this stage, design assumptions and cost estimates for the various elements are based on experience from previous projects and the latest cost data available, rather than being project specific. This is informed through analysing historical project outturn costs and recent tender returns for similar works. As the project progresses through further detailed design and development, the design will mature and the scope will be further refined. Engagement with the supply chain will also provide more accurate cost information for the assets and materials that are specific to this project, which will have a bearing on the estimated cost and will increase both design and cost certainty. This excludes the GIS bay at Branxton Substation, which has already been tendered and procured as part of the Branxton Substation development.

This standard approach provides a consistent and robust basis for estimating costs during the early stages of project development and reflects lessons learned from previous delivery experience. As the project progresses through detailed design and procurement, cost assumptions will be refined using market-tested prices and further benchmarking will be undertaken where appropriate to demonstrate the efficiency of the proposed investment.

8 Deliverability

We have applied SPT 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 these works. We have assigned a dedicated Project Manager to

the works at every stage who is responsible for overall delivery of the scope and is the primary point of contact for all stakeholders.

8.1 Delivery Schedule / Key milestones

Thorough the development and delivery of the Branxton to Braxbess 400/132kV Collector, there will be ongoing planning, coordination and interface meetings with both the EGL1 and Branxton 400kV Substation project teams to identify, understand and manage all areas of common and interdependent works. These engagements will focus on coordinating activities such as cable route development, access arrangements, construction sequencing, environmental constraints, outage requirements and shared infrastructure opportunities. Table below summarises the key milestones within the delivery schedule of this project.

Table 11 – Summary of Project Key Milestones

Milestone	Description	Completion Date
1	Provision of Consents for substation works (developer)	Jul-25
2	Transformer contract award	Feb-26
3	Main Contract Award	May-28
4	Commence Site Works	May-28
5	Project assessment submission Date	Oct-28
6	Complete Site Works	May-29
7	Project closure	Mar-30

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

The Project Manager will facilitate internal Project Team Meetings, in which project progress and deliverables will be reviewed and any arising risks or issues will be discussed and addressed.

8.2 Quality Management

SPT adopts a "lifecycle" 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:

8.2.1 Quality Management During Project Development

Any risk or opportunity that may affect the quality of the product are detailed in the Project Risk Register

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

8.2.2 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.

8.2.3 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 undertaken in person, meaning with the person undertaking the inspection can document evidence (e.g., photographic) first hand. Any actions raised during on-site audits / surveys are documented and communicated with the applicable people in a timely manner so any issues can be resolved promptly.

The following inspections are completed:

- Quality Inspections (monthly)
- Environmental Inspections (monthly, with weekly review by third party Environmental / Ecological Clerk of Works (EnvCoW / ECoW))
- 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.

8.2.4 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.

8.3 Project Risk and Mitigation

A high-level estimate at [redacted] of initial Risk and contingency allowance has been included at this early stage but a more robust risk, based on a bottom-up evidence-based approach (QCRA analysis) will be used to arrive at a fair and balanced level of risk and contingency allowance at the Project Assessment stage.

Table 12 below provides a breakdown of the top five project risks followed by further detailed explanation regarding mitigation and likelihood.

Table 12: Key Delivery Risks and Mitigations

Risk	Description	Probability	Mitigation
[redacted]			

Risk	Description	Probability	Mitigation
[redacted]			

8.4 Environmental Considerations / Environmental Sustainability

8.4.1 Biodiversity Considerations

SPT is committed to protecting and enhancing the ecosystems in which its network operates, in accordance with national policy such as National Planning Framework 4 (NPF4), internal standards, regulatory requirements, and recognised industry best practice. The principles of the mitigation hierarchy are applied throughout project development and delivery, with priority given to avoiding and minimising environmental impacts wherever practicable. Where residual effects cannot be avoided, appropriate restoration and compensatory measures are implemented to ensure that projects delivered under Permitted Development Rights (PDR) achieve, as a minimum, No Net Loss of biodiversity. For projects requiring planning consent, SPT seeks to deliver a minimum 10% Biodiversity Net Gain (BNG) in line with relevant planning and environmental commitments.

As part of the project's environmental surveys, SPT will commission a BNG assessment to establish baseline habitat extent and condition across the site. The

assessment quantifies the biodiversity impacts of the proposed development in Biodiversity Units (BUs). Where impacts result in a BU loss, habitat enhancement measures will be identified to achieve the replacement of units lost plus a minimum 10% uplift, in accordance with SPEN's RIIO-T3 commitments.

SPT will review the BNG assessment, habitat condition surveys and biodiversity metric calculations to verify the reported impacts and confirm the biodiversity enhancement requirements associated with the project. Once the required biodiversity units have been established, SPT engages with external organisations to identify and secure appropriate biodiversity enhancement opportunities. Potential organisations may include local nature and conservation bodies such as fisheries trusts, Environmental Non-Governmental Organisations (eNGOs), Wildlife Trusts, charities and other relevant organisations.

Through these partnerships, SPT provides funding for habitat creation or enhancement projects that deliver measurable biodiversity benefits. Where practicable, enhancement measures are located within the local authority area affected by the development, ensuring that environmental benefits are delivered within the communities and landscapes associated with the project. For the [redacted], preference will be given to opportunities within East Lothian.

8.4.2 Environmental Considerations

Any environmental constraints associated with the proposed project would firstly be highlighted via a desktop study, using a range of publicly available databases (e.g., Scotland's environment web). If an Environmental Impact Assessment (EIA) and/or a planning submission document are available, the desktop study can be compiled referencing these documents, as applicable constraints may have already been identified. The aim of the desktop study is to highlight high-level environmental constraints, e.g., (not exhaustive list) presence of designated sites (e.g., Special Protection Areas (SPAs), watercourses and floodplains, Ancient Woodland Inventory (AWI), Historic Environment Scotland records.

As the project progresses, the desktop study informs what on-site environmental surveys are required. On-site environmental surveys are undertaken, to ground-truth the constraints identified via the desktop study / EIA documents and/or check if any new / previously unidentified constraints are applicable. The results from these surveys help inform the draft of an Environmental Baseline Assessment (EBA) as well as an initial Construction Environmental Management Plan (CEMP) which outlines proposed / recommended mitigations for constraints identified.

Specific to the proposed project area, the initial proposed connection cable routes will pass through areas of (semi) AWI, riparian corridor of the Braidwood Burn and an additional watercourse as well as presence of scheduled monuments. Therefore, potential environmental constraints could include (not exhaustive list): presence of AWI, nesting birds, presence of protected species (e.g., badger, pine marten and

otter), working in/near watercourses, works near archaeologically significant assets (e.g., scheduled monuments).

Where possible the design of the proposed project should aim to avoid conflict with known constraints, e.g., avoiding noted exclusion zones around known badger setts and/or scheduled monuments. Additionally, vegetation clearance for access routes should be avoided as should any watercourse crossings where practical. Where constraints cannot be avoided examples of applicable mitigations include (not exhaustive list): arranging vegetation clearance outside the bird nesting season, following good practice guidance when working near watercourses (e.g., all refuelling of plant is undertaken at least 10 metres from watercourses), (camera) monitoring of known and/or suspected badger setts is undertaken before and during the works, an independent Environmental / Ecological Clerk of Works (EnvCoW / ECoW) is employed to oversee the works and audit implementation and management of applicable mitigations outlined in CEMP for the site.

On occasion, explicit permissions will be required from applicable regulators (e.g., SEPA, NatureScot and/or Scottish Forestry) and/or stakeholders (e.g., local authority) for specific project activities to be undertaken associated with specific environmental constraints. Examples of these (again not an exhaustive list), given specific constraints which are likely most relevant in the project area could include: engineering permit from SEPA for watercourse crossing, licence from NatureScot for works within exclusion zone of known badger sett, permission to remove area of AWI from Scottish Forestry and/or permission from local authority to work near archaeologically sensitive sites. So any applicable permissions are applied for and granted in a timely manner (as not to disrupt project programme), early engagement with appropriate stakeholders is required and SPT staff will initiate this contact. Through initial desktop study and then the project design process, ideally potential environmental constraints are avoided and the need for any explicit permissions are not required.

8.4.3 Carbon Emission considerations

In line with SP Transmission's RIIO T3 Environmental Action Plan, this project will embed sustainability across the project lifecycle, including measures to minimise carbon emissions, protect and enhance biodiversity, and apply circular economy principles to reduce waste and improve resource efficiency. Sustainability considerations will be integrated into tendering and procurement activities to support the use of low carbon materials, responsible suppliers, and high environmental performance in delivery.

The project will consider carbon emissions at all stages of the design and construction. A baseline carbon assessment will be made at the initial design stage outlining the carbon footprint of a BAU approach.

A Carbon Management Plan will be created that is aligned with the Publicly Available Specification (PAS) 2080:2023 Carbon Management in Infrastructure. The Carbon Management Plan shall detail the approach and opportunities taken to reduce carbon across the Project's lifecycle. This shall include, but not be limited to:

- A defined carbon reduction target for the project, covering the period from initial design to final design
- Outlining the actions that will be taken to achieve this reduction target
- An estimate of the whole life carbon emissions of the project based upon the best available design information. This shall include operational and embodied components of A1-A5 (product & construction process), B1-B8 (use) and C1-C4 (end of life) lifecycle stages

8.5 Stakeholder Engagement

Primary engagement with key stakeholders including the relevant Planning Authority, Local Communities, and affected Landowners has been undertaken through the submission of Developer's Planning Application process and the associated consenting activities covering [redacted]

SPT engagement has been undertaken in relation to the Branxton Project (TORI 124), including the local authority East Lothian Council and local community organisations. These existing channels will be used for future stakeholder engagement activities as the project progresses, particularly in advance of cable installation works. These consultations will provide further opportunities for affected stakeholders, landowners, and local communities to raise concerns, discuss construction-related impacts, and contribute to the development of mitigation measures and delivery plans.

9 Incentives

9.1 Major Project ODI eligibility

Based on the criteria in the Major Project ODI-F Governance Document for non-CSNP Re-opener projects (section 2.7), this project cannot be described as being of strategic importance at this time, it is not aligned with the UK's CP2030 targets, having been assigned as Gate 2 Phase 2 under Connections Reform. Additionally, at the Eligibility Letter stage, the project is not yet sufficiently developed to determine a P50 date or have cost maturity. It should be noted, that at the time of

the Project Assessment submission, the NESO will have published the first SSEP, at which time it may be appropriate for the project to be reassessed for strategic importance. As a result, we believe that the application of an ODI-F for this project should be reassessed at the time of Project Assessment submission, where the more information will be available.

10 Appendices

Name	Description	No of Pages
Appendix 1: *RIIO-T3 LSpC 3.11 Generation Connections Volume Driver Allowance*	*Includes calculation of the Volume Driver allowance provided under Special Condition 3.11 Generation Connection volume driver.*	*1*
Appendix 2: *Asset Possibilities Breakdown*	*Forecast cost breakdown into Asset Possibilities*	*1*
Appendix 3: *Branxton Cable Route Drawing*	*Drawing showing indicative 400kV cable route from Branxton 400kV Substation to Braxbess Collector substation, including also other circuits coming out from Branxton 400kV GIS substation.*	*1*

Appendix 1 - RIIO-T3 LSpC 3.11 Generation Connections Volume Driver Allowance

[redacted]

	Regulatory Year
Commissioning Date	2030

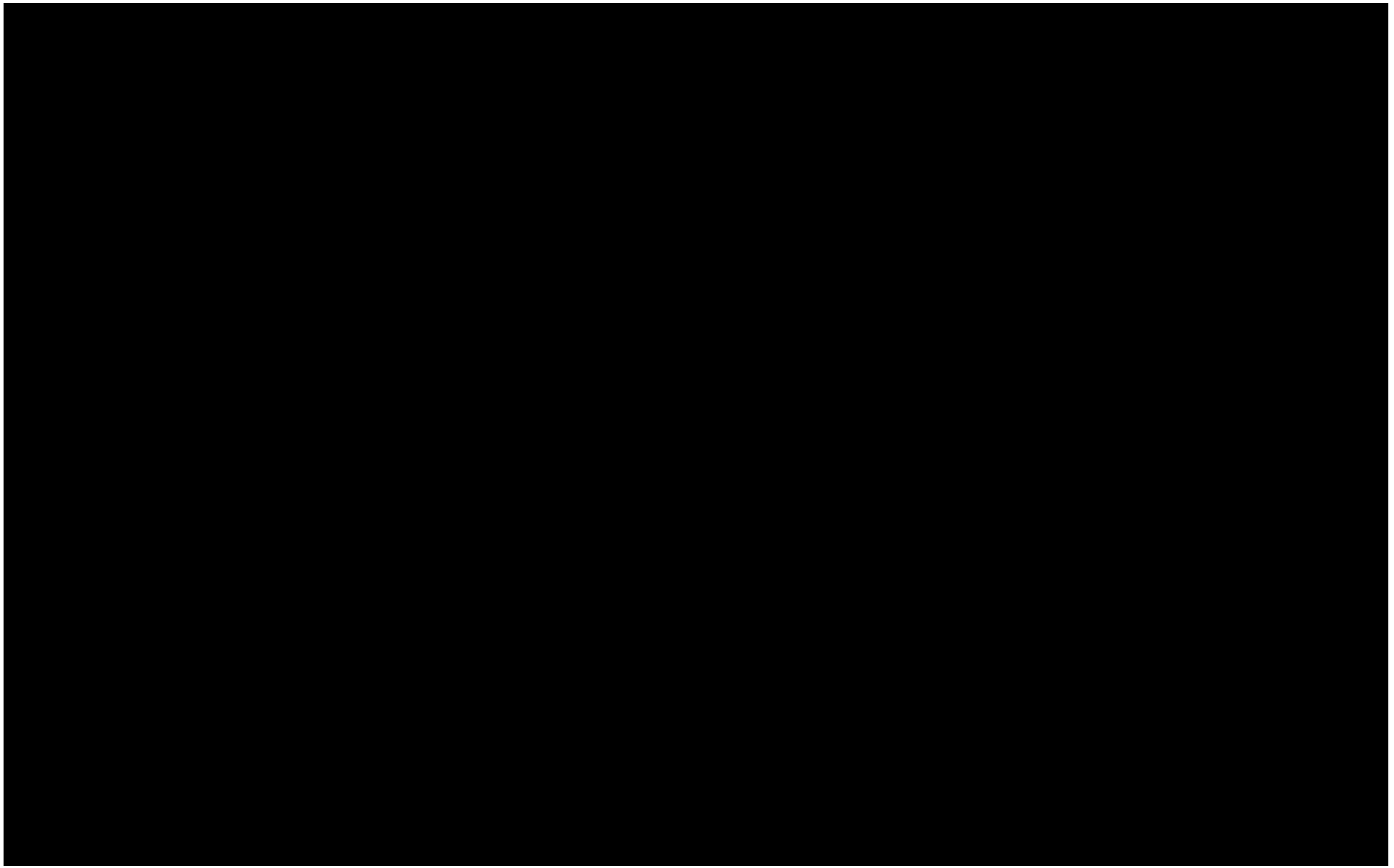
Commisioning Date
[redacted]05/2029

[redacted]

Appendix 2: Asset Possibilities Breakdown



Appendix 3 – Branxton to Braxbess collector substation indicative Cable Route



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