Glenlee to Newton Stewart OHL Reconductoring

SPT–RI-223

Eligibility Letter

Version: 1.0, [7th Oct 2026]

GLENLEE TO NEWTON STEWART OHL RECONDUCTORING	
Name of the Scheme	Glenlee to Newton Stewart OHL Reconductoring (SPT-RI-223)
RRP References	Glenlee to Newton Stewart OHL Reconductoring (SPT-RI-223) H1 (Scheme_C&V_Calc_Load_Actuals & E1.11b ET3 Pipeline Log)
BPDT / Scheme Reference Number	SPT200453
Load Board Reference	Glenlee to Newton Stewart OHL Reconductoring (TORI 223) H1 (20260728_RIIO3_Reopener_Pipeline_ET_Master_v1.2 – SPT v1 HC.xlsm – 28 August 2026 Load Board)
Investment Driver	*Local Enabling (Entry) - atypical connection: Thermal Uprating.* *Shared-drivers (Non-Load)*
PASE alignment	The proposed reconductoring with HTLS conductor is a PASE-aligned solution under Linear Builds /Interventions-Primary Options.
Outputs	Replacement of the phase conductor on the overhead line route from Glenlee to Newton Stewart with a High Temperature Low Sag Conductor system, as part of the Dumfries and Galloway Reinforcements.
Cost	£48.12m
Delivery Year	2030
Extension cost (applicable only to substations)	N/A
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

GLENLEE TO NEWTON STEWART OHL RECONDUCTORING	
Interactive Projects	The current reinforcement projects within this area include: • SPT-RI-221 Kendoon to Glenlee 132kV Reinforcement • SPT-RI-222 Glenlee to Tongland 132kV Modernisation • SPT-RI-4109 Newton Stewart – Glenluce (BT Route) Reconductoring There are also a number of generation connection projects scheduled in this area.

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1 Abbreviations / terminology

Table 1: Abbreviations

Abbreviations	Term
AAAC	*All Aluminium Alloy Conductor*
ACCR	*Aluminium Conductor Composite Reinforced*
ACSR	*Aluminium Conductor Steel Reinforced*
APM	*Advanced Procurement Mechanism*
BESS	*Battery Energy Storage System*
BG Route	*OHL Route from Glenlee to Newton Stewart*
BT Route	*OHL Route from Newton Stewart to Glenluce*
CAI	*Closely Associated Indirects*
CT	*Current Transformer*
ESG	*Environmental, Social & Governance*
GIS	*Gas Insulated Switchgear*
GSP	*Grid Supply Point*
HTLS	*High Temperature Low Sag*
LC	*License Conditions*
LR	*Load Re-opener*
MW	*Megawatt*
MVA	*Megavolt-amperes*
OHL	*Overhead Line*
PCD	*Price Control Deliverable*
PCF	*Preconstruction Funding*
RIIO	*Revenue = Incentives + Innovation + Outputs*
RRP	*Regulatory Reporting Pack*
SME	*Small & Medium-Sized Enterprises*
SpC	*Special License Condition*
SPT	*Scottish Power Transmission*
STEM	*Science, Technology, Engineering & Mathematics*

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

Table 3: Project Summary Table

Title section	
Name of scheme	Glenlee to Newton Stewart OHL Reconductoring (SPT-RI-223)
Investment driver	Load (Local Enabling (Entry) - atypical connection[1]: Thermal uprating. Non-Load (Shared Drivers)
Solution	Reconductor the existing 132kV circuits between Glenlee and Newton Stewart 132kV substations with an HTLS conductor giving a summer pre-fault continuous rating of 227MVA.
PASE Alignment	The proposed HTLS reconductoring is a PASE-aligned option under Linear Builds/Interventions – Primary Options.
Spend Apportionment (£m)	
RIIO-ET2	£0.00m
RIIO-ET3	£48.12m
RIIO-ET4	£0.00m
Beyond RIIO-ET4 (>2035/36)	£0.00m

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

4 Need Case

4.1 Eligibility

This Eligibility Letter application sets out SPT's plans to reconductor the existing 132kV double circuit between Glenlee and Newton Stewart, also known as BG Route, replacing the single Lynx 175mm^2 ACSR conductor with Lark 250mm^2 ACCR HTLS Conductor or similar. Site works will commence in August 2028 with completion of works by October 2030, all of which falls within the RIIO-ET3 period.

This application is submitted in accordance with Licence Special Condition (LSpC) 3.18.6 and relates specifically to the following activities as per section 1.5 and 1.6 of the Load Re-opener Guidance and Submission Requirements Document:

1.5 "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.

1.6 In addition, projects that relate to one of the areas above but also relate to the health of existing assets on the network, also referred to as 'shared driver' projects, which have not been funded within baseline allowances, can also be brought forward through Load Re-opener."

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 engineering solution proposed in section 4.1 is a PASE-aligned solution included under Linear Builds/Interventions Primary Options, within the Reconductoring category.[2] As the solution is fully aligned with the PASE Framework the project should proceed under Track 2.

SPT has identified a requirement to secure a post-fault summer rating of 197.5 MVA per circuit on the 132 kV overhead line between Glenlee and Newton Stewart 132kV

[2] *Load Re-opener Guidance and Submission Requirements Document*

Substations in order to maintain network security and compliance with planning standards considering ongoing demand/generation growth. The existing Lynx 175 mm² ACSR conductor cannot meet the required post-fault capacity, and non-build or operational intervention is insufficient to address the identified issues. The existing steel lattice tower infrastructure is still functional and so does not require replacement. Therefore, the option to reconductor as opposed to rebuild is preferred. The figure of 197.5MVA is informed by planned generation connections in the area. This can be seen in Table 6.

In response to these constraints, SPT has identified high-temperature low-sag (HTLS) reconductoring solution as the most viable means of increasing the capacity of this route, whilst limiting impact on cost, environment and planning constraints. HTLS conductors are highly specialised and are capable of operating at higher operating temperatures, up to 210°C in the case of ACCR, which significantly increases the capacity of the circuits. This approach enables effective use of the current working asset base while avoiding the significant cost, environmental impact, and delivery risk and time associated with tower replacement, foundation works, or route redevelopment.

Options assessment has shown that a HTLS conductor is the primary choice to achieve the required post-fault capability preserving statutory safety clearances and the structural integrity of existing towers and foundations.

Choosing an HTLS conductor solution, such as ACCR Lark or equivalent, enables SPT to address identified capacity shortfalls within the existing infrastructure, whilst maintaining network resilience and operational flexibility. Lark conductors are the highest rated conductor able to be used on the existing towers without major tower strengthening being required and so would be the primary PASE option available. By delivering the required capacity uplift without significant structural intervention, this approach represents an efficient and proportionate response to the identified need, supports sustainable use of existing assets, and reduces whole-system risk and carbon impact associated with more invasive reinforcement options.

As this engineering solution is a PASE Primary Option, it would be expected to follow Track 2.

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
SPT200453	Glenlee to Newton Stewart OHL Reconductoring (SPT-RI-223)	Replacement of existing conductor on BG Route with a High Temperature Low Sag (HTLS) conductor, including upgrade of existing underground cable connecting into Newton Stewart.	[redacted] October 2030

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 Output Table (Volumes)

Asset Category	Asset Sub-Category Primary	Voltage	Intervention	Forecast Additions	Forecast Disposals	Refurb. Volumes
BG Conductor replacement (Glenlee to Newton Stewart)						
Overhead Tower Line Conductor	132kV OHL (Tower Line) Conductor	Rating <300MVA	Replacement		60.08km	
Overhead Tower Line Conductor	OHL (Tower Line) HTLS Conductor	132kV	Replacement	60.08km		
Overhead Line Fittings	Fittings	132kV	Replacement	204	204	
Overhead Tower Line	Tower	132kV	Refurbishment Major			102
Newton Stewart GSP						
Cable	Circuit Cable - 1 core per phase	132kV	Replacement	0.33km	0.33km	

4.4 Justification of Project Need

The Dumfries and Galloway region has experienced a sustained increase in applications for generation connections, driven primarily by significant onshore wind. This has resulted in greater utilisation of the existing 132kV network, particularly along the Glenlee to Glenluce routes between Newton Stewart GSP and Glenlee Substation, BG Route, and Glenluce to Newton Stewart (BT Route), where export capability is becoming constrained under changing network conditions.

The transmission networks surrounding Newton Stewart and Glenluce GSPs, as depicted in Figure 1 have seen a high volume of existing embedded generation developments, with further embedded and directly connected projects being contracted to connect as presented herein (refer to Table 8 for more detail).

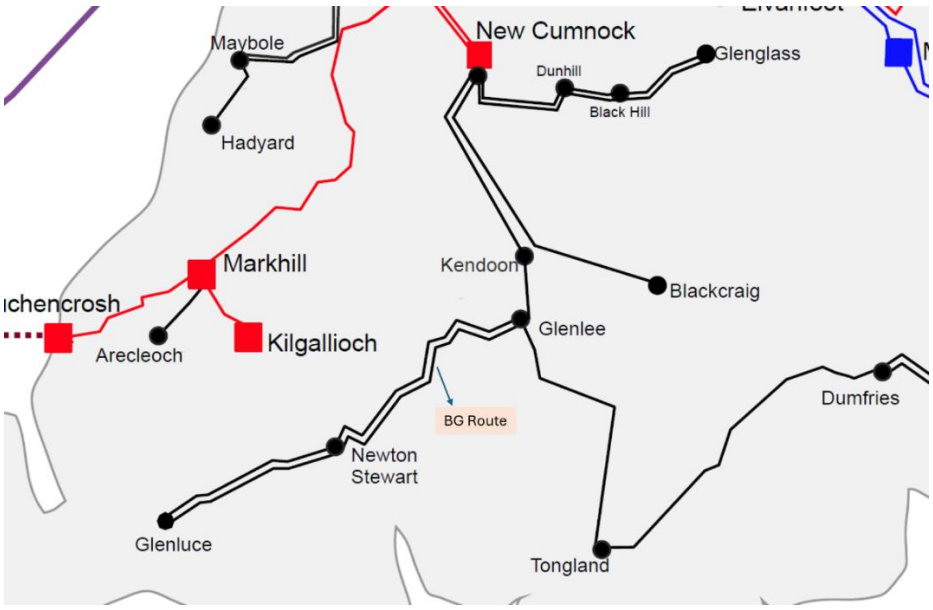


Figure 1: South West Scotland 132kV Network

The cumulative effect of these developments is that the Newton Stewart to Glenlee 132kV circuits would, without intervention, operate beyond their non-firm export capability. As a result, additional non-firm access is no longer achievable without breaching thermal limits and future connection offers are contingent on the reinforcement of the existing network. Because of this, further connections in this area must be deferred until completion of the proposed reconductoring works, which are required to increase circuit thermal rating and ensure continued compliance with network planning standards.

This requirement aligns with the eligibility criteria for the Load Re-opener mechanism under Ofgem's RIIO framework. The proposed reconductoring works

represent an efficient and timely intervention to facilitate generation connections, maintain system operability, and support the delivery of net zero targets in line with Ofgem's regulatory objectives.

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

The total Gate 2 contracted and connected generation on BG and BT routes (embedded connections via Glenluce and Newton Stewart, plus directly connected generation), less the total minimum demand of 7.2MW, is currently 262.1MW. The Newton Stewart–Glenlee 132 kV double circuit (BG route) currently employs Lynx conductor, with a summer pre-fault thermal rating of 89 MVA per circuit, providing an overall non-firm transfer capacity of 178MVA or approximately 161 MW. As a result, the net export requirement exceeds the available non-firm capacity of the circuit by around 100MW. Consequently, the transmission route would be operating at its non-firm limit under peak generation conditions. In this context, SPT has identified that network reinforcement via reconductoring of the existing route, is required to alleviate the constraint and enable the accommodation of further generation connections in the area.

The "do nothing" option has been assessed and discounted as it would not represent a credible or compliant approach under SPT's statutory duties and licence obligations. Failure to intervene on the Glenlee to Newton Stewart route would leave existing transmission constraints unresolved, restricting the connection and export of renewable generation and undermining progress towards Net Zero targets. In addition, due to the existing asset condition, the conductor and earthwire will require replacement regardless of the load requirements on this route. While this option avoids immediate capital expenditure, it would result in significant long-term costs through increased system inefficiencies, lost generation opportunities, potential regulatory risks and further deterioration of already degraded assets. As such, it offers no enduring consumer or system benefit and cannot support planned generation growth at Glenluce and Newton Stewart.

The "do minimum" option, involving like-for-like reconductoring using Sycamore AAAC, would provide a modest increase in thermal capacity at relatively low incremental cost compared to alternatives. However, although this approach

would partially address current constraints, it would not deliver sufficient capacity to accommodate forecast Gate 2 to Whole Queue Phase 1 and Phase 2 generation connections, nor provide any headroom for further network growth. Consequently, whilst this offers the lowest cost option, it risks an outcome that would necessitate further reinforcement in the near future. This introduces the potential for higher whole-life costs and inefficient use of consumer funds, meaning the option does not represent a future-proof or economically efficient solution.

Section 4.6 discusses the projects interactive with this TORI. These projects are contingent on the completion of SPT-RI-223 and so in order to progress with these customer connections, the urgency of reconductoring the BG route can be defined.

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 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, 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 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 reviewed 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.

Of the parties originally driving this reinforcement project, two have been identified has Gate 2 Phase 1, which means they are required by CP2030, and have been issued with Gate 2 Phase 1 offers. Whilst these offers are out for acceptance with the customers, it is essential that works progress to maintain their connection date. In addition to the connection projects that are now driving the SPT-RI-223 reinforcement, there were three further onshore wind projects that were identified as Gate 1, due to failing the Strategic Alignment check as well as self-selecting to receive Gate 1 offers and therefore are not currently included in the background. Although they are not currently considered within the queue, it is important to

ensure that reinforcements, where practical, are suitably designed such that any reasonably foreseen future development can be accommodated. The fact that there have been onshore wind projects in the area would suggest that they, or other projects of this type, could reasonably request to connect in the future.

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. In terms of electricity generation, the starting point for the SSEP is the Clean Power 2030 action plan, therefore the projects driving the reinforcement project within this paper can be assumed to be included within the background for the SSEP. Going forward, it is anticipated that the SSEP will continue the growth of onshore wind given the high wind resource and policy support in Scotland. As indicated by Gate 1 offers in the area, there is clearly scope for growth in onshore wind in the area connecting to BG route, therefore additional headroom in the capacity of the new conductor chosen has been included to accommodate a degree of future growth.

4.4.3 Glenlee to Newton Stewart Reconductoring - Background.

BG route currently comprises a 132 kV double-circuit overhead transmission line between Newton Stewart and Glenlee substations. The Glenlee to Newton Stewart 2 circuit is constructed with a single ACSR 175 mm² 'Lynx' phase conductor installed in 1965, while the Glenlee to Newton Stewart 1 circuit utilises a single ACSR 175 mm² 'Lynx' phase conductor installed in 1980. The earthwire consists of a single ACSR 70 mm² 'Horse' conductor, also installed in 1965.

Both circuits are supported by 102 steel lattice towers (BG001 to BG102) of PL16 design, spanning an approximate route length of 30.04km and a total circuit length of 60.08 km.

Since their respective commissioning dates in 1965 and 1980, the circuits have not experienced any major faults. However, a number of minor refurbishment interventions have been undertaken to maintain asset integrity, including insulator replacement works completed in 2017 on the Glenlee to Newton Stewart 2 circuit.

SPT's Overhead Line Asset Investment Policy defines the expected service life for conductors found on the network. The core-only greased Lynx phase conductors installed on the BG Route have an expected end of serviceable life at a maximum of 60 years depending on the environment that they are operated in.

Intrusive phase conductor sampling undertaken in 2018 showed failure of the galvanisation of the steel core. It also showed negligible quantities of poor condition grease on the core only. This shows loss of both grease and galvanic protection of the steel core. The conductor sampling estimated a remaining life of 15 years for the phase conductor. Non-intrusive Cormon testing was also carried out in 2018 on the earthwire conductor. A number of spans exhibited degradation of the galvanic coating which was severe in some locations. Due to these results, BG route requires the replacement of both phase and earthwire conductor.

Steel lattice towers typically have a design life of approximately 80 to 100 years, which can be extended through the timely application of protective paint systems before significant degradation of the zinc coating occurs. Inspections of BG route have identified no notable corrosion of the tower steelwork, and the towers have been repainted at appropriate intervals to preserve their condition. The towers on BG route are due to be painted however tower painting was not included in the RIIO-T3 non-load plan due to anticipated load related investment. Consequently, the towers remain in good asset health and will be painted as part of this scheme.

BG route and surrounding network has also had a significant increase in requests for generation connections, leading to an increased required capacity requirement that BG route is currently unable to meet, driving the need for reconductoring.

The BG Route presently uses Lynx conductor which has a summer pre-fault rating of 89MVA, giving the route an intact capacity of 178 MVA or circa 161MW. The potential maximum export based on Gate 2 contracted and connected generation, and a minimum demand of 7.2MW, is 262.1MW. Therefore, without intervention, the transfer on this route will exceed its non-firm capacity once contracted generation has connected. This is demonstrated in Table 6.

Table 6: Prospective Export Requirement on BG Route

		MW			
		Newton Stewart GSP	**Glenluce GSP**	**Directly Connected**	**Total**
Connected	Connected Generation (>1MW)	36.7	110.8	-	147.5
	Connected Generation (<1MW)	3.3	4.5	-	7.8
	Minimum Demand	2.7	4.5	-	7.2
	Maximum Export	37.3	110.8	-	148.1
Contracted - Embedded	Gate 2 Generation*	16.0	12.5	-	28.5
	Potential Export	53.3	123.4	-	176.6
Contracted - Direct	Gate 2 Generation*	-	-	85.5	85.5
Total	Potential Export	53.3	123.4	85.5	**262.1****

*Gate 2 generation breakdown can be found within Table 8.

** The total potential export of 262.1MW is equivalent to 276MVA.

It can also be seen that the connected and potential (Gate 2) export capacity via grid transformer T1 at Newton Stewart GSP (60MVA, circa 57MW) is approaching its rating. To accommodate future load and generation growth in and around Newton Stewart and Glenluce, consideration has been given to install a second 60MVA grid transformer at Newton Stewart (with an option being reviewed to install a 90MVA unit) and replace the existing two 60MVA grid transformers with 90MVA units at Glenluce. The prospective export requirement between Newton Stewart and Glenlee 132kV reflecting the GSP transformer upgrades is shown in Table 7, directing a need to increase the existing network capacity in order to meet the potential future generation and demand growth.

Table 7: Prospective Export Requirement on BG Route including GSP upgrades

Gate 2 connections and GSP upgrades (reflecting future embedded generation at GLLU and NETS GSPs)	Potential Export on BG Route	
	(MW)	(MVA)
[redacted]		
Sub-Total	**370.8**	**395.0**

A Bilateral Connection Agreement is in place between NESO and the developers of the Gate 2 connection projects detailed in Table 8. In each case, the SPT-RI-223 project is identified as Enabling Works. There are [redacted] Gate 1 projects based on the NESO Gate 1 Notification information as shown in Table 9 (all due to failing strategic alignment, except [redacted] which self-selected to receive a Gate 1 offer) in this area. Some of these Gate 1 projects may be eligible to meet the Gate 2 criteria in a future application window under the NESO's Protection Clause 3a. The Gate 2 Protection Clause 3 refers to projects which obtain planning consent after closure of the CMP435 Gated Application Window (those who reapply in CMP434 only). According to the NESO Gate 2 Criteria Methodology (April 2025), applicants with the Protection Clause 3a will be guaranteed a place in the Gate 2 Tranche queue and will receive a Gate 2 offer, even if the project exceeds the zonal or GB permitted capacity for its technology type. Projects eligible for Protection Clause 3b will only be required to adhere to the GB total permitted capacity for the relevant technology.

SPT's internal analysis indicates that [redacted] project that may be eligible for receiving a Gate 2 status in a future application window under the NESO's Protection Clause 3a[3]. This potential

[3] *This is SPT's best estimate based on the information available at the time of writing this paper and may change subject to customers' planning application progress*

additional MW requirement together with the prospective export requirement as presented in Table 7 can be accommodated with the proposed reconductoring of BG Route.

Table 8: Existing and Gate 2 Generation Development dependent Upon SPT-RI-223

Generation Developments	Connection Point	Gate 2 Status	Export Capacity (MW)	Contracted Energisation Date[4]
Gate 2 Connections				
Airies	Newton Stewart GSP	Embedded; Connected	36.7	N/A
[redacted]				

Table 9: Gate 1 Projects in the NETS – GLLU area

Project Names	Possible Protection Clause[3]	Contract Status	Contracted Generation (MW)	Contracted Energisation Date
Gate 1 Connections				
[redacted]				N/A
				N/A
				N/A
				N/A
				N/A
				N/A

The system requirements and design parameters of the proposed works are summarised in Table 13.

4.5 Project Benefits

The main benefit associated with this project is the increase network capacity required to enable the connection of consented/ contracted renewable generation in the Newton Stewart area.

[4]The contracted energisation dates shown are based upon the information available at the time of writing. Dates may change subject to connections reform offers.

This project is PASE aligned and meets the requirements of efficiency, futureproofing, and consumer value. By maximising the capability of the existing route infrastructure, the project minimises environmental impacts and avoids the additional cost and complexity associated with constructing a new circuit.

In addition to increasing network capacity, the replacement of the conductor and earthwire will improve asset condition and resilience; addressing asset health considerations and extending the operational life of the network in this region. This delivers both immediate network benefits and enduring value for consumers through improved reliability and reduced long-term maintenance requirements.

4.6 Interactive Projects

SPT-RI-223 is enabling works for the contracted generation projects shown in Table 8.

[redacted] is a consented onshore wind development with a capacity of approximately [redacted]MW. The scheme is currently in the pre-construction phase and is proposed to tee-connect into the Glenluce to Newton Stewart No.1 132kV circuit. The proposed connection will result in the OHL conductor exceeding its thermal capacity and is therefore contingent upon conductor uprating.

Airies Wind Farm is currently connected to Newton Stewart GSP under its Stage 1 Restricted Available Access (RAA) connection agreement associated with an intact overload of any of the Dumfries and Galloway 132kV circuits. [redacted] New Cumnock SGT2B (completed) and SPT-RI-223.

[redacted] Gate 2 project expected to connect to Newton Stewart GSP with a non-firm capacity of [redacted]MW. The project is to co-locate with a [redacted]MW battery storage facility.

As presented in Table 9, there are also further Gate 1 connections which may be contingent on the delivery of SPT-RI-223 if they were to return in a future Gate 2 window.

4.7 Economic Benefits

The preferred option is PASE aligned and delivers an efficient solution that supports whole-life cost optimisation, minimises delivery and implementation risk, and provides additional network capacity to accommodate future system growth. By balancing immediate network requirements with longer-term development

needs, the proposed solution 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 environmental, 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 enterprises (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:**

Although this project involves the upgrade of the conductor of an existing transmission line, increasing its capacity, it remains at the same voltage, meaning that the proposed works are currently not eligible to attract Community Benefits funding.

- **Bill Discount:**

The reconductoring works proposed under this project are initially not eligible for the Bill Discount Scheme under the current scheme arrangements.

5 Optioneering

This section provides a description of the various alternative options that were considered to accommodate connection of renewable generation developments in the southwest of the Dumfries and Galloway area. A summary of each option is described in Table 12. Also, the system requirements and design parameters for the considered options are summarised in Table 13.

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 scope of the options appraisal is limited to the OHL Route, including the cable section connecting into Newton Stewart, and has been based on the current post fault continuous rating and the rating required to allow for future generation connections.

The options assessed include a 'Do Nothing' option, a like-for-like conductor replacement option, an HTLS conductor replacement option and an option to fully replace the existing OHL with either a new OHL or with a cable route.

Each section discusses the relative merits of HTLS conductor. Option 1 looks at whether reconductoring is necessary or if works can be deferred; Option 2 considers a like-for-like reconductoring, using Sycamore AAAC to replace the current Lynx conductor; Options 4a and 4b discuss a full rebuild of the OHL route and Option 5 discusses a full replacement using a cable route. Option 3 is the preferred option discussed in this section – reconductoring using HTLS conductor.

5.1 Existing System Configuration

The existing system is comprised of a 132kV double circuit between Glenlee and Newton Stewart (BG Route), as seen in Figure 2 . It is around 30km in length and runs on steel lattice towers with single Lynx 175 mm^2 ACSR conductor. Each 132kV circuit has a pre-fault summer rating of 89MVA. At the end of each OHL circuit is a short cable section which facilitates the connections into Glenlee, with a short cable section on the No.2 circuit line entry at Newton Stewart.

[redacted]

Figure 2: BG Route Map

A single line diagram of the existing network configuration can be seen in Figure 3 below.

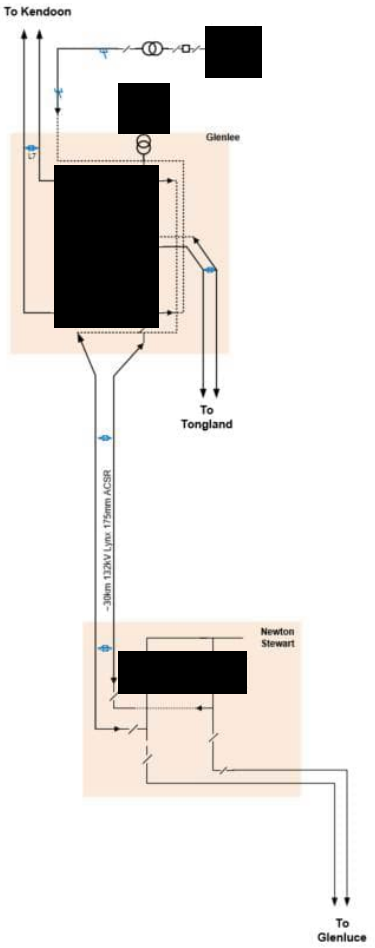


Figure 3: Single Line Diagram of Existing BG Route Configuration

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 in Table 12, while the system requirements and design parameters for the considered options are outlined in Table 13 within Section 5.3.

5.2.1 Option 1 – Do Nothing or defer

A "do nothing" or defer option is not considered credible for this project as it would be inconsistent with SPT's various statutory duties and licence obligations. Asset condition assessments have identified degradation of the existing conductor and earthwire on this circuit, meaning replacement of these assets is required irrespective of any load-related driver. Consequently a 'do nothing' approach is not feasible, as it would fail to maintain the network in an appropriate operational condition.

In addition, timely progression of the conductor replacement is essential to facilitate increasing levels of generation at and between Glenluce and Newton Stewart GSPs. Reconductoring the route is required to achieve the minimum pre-fault and post-fault continuous ratings necessary to accommodate forecast power flows and support future generation growth. Delaying the investment would therefore not only increase asset condition risk but would also constrain the network's ability to support planned generation connections and the wider transition to a net zero energy system.

5.2.2 Option 2 – Do Minimum – Reconductor BG Route with a like-for-like AAAC conductor

The minimum required works would be to reconductor the route with a like-for-like conductor replacement. As such, reconductoring with Sycamore AAAC would be the closest conductor type currently used by SPT for replacement of the existing Lynx conductor. Consistent with RIIO-T3 baseline projects, SPT's preferred like-for-like replacement of Lynx would be Sycamore AAAC, as it provides approximately 20% greater thermal capacity than Poplar AAAC for only around a [redacted] (this represents a more efficient long-term investment by delivering additional network capacity at a relatively small incremental cost).

The total cost of delivering this option is £33.08m including [redacted] associated risk.

However, in the case of BG route, a like-for-like reconductoring does not result in a compliant solution. Although it would address the underlaying asset condition requirements, the resulting thermal capacity would be insufficient to accommodate forecast future generation connections associated with both Phase 1 and Phase 2

developments around Glenluce and Newton Stewart areas. Furthermore, the option would not provide enough additional capacity to support all Gate 2 connections never mind anything additional for future requirements, limiting the network's ability to accommodate future growth and potentially resulting in the need for further reinforcement at a later date.

5.2.3 Selected Option 3– Reconductor BG Route with an HTLS Conductor

Under this option, the route would be reconductored with an HTLS conductor. This option represents the most credible and efficient solution as it facilitates the forecast increased generation connected at Glenluce and Newton Stewart GSPs while providing capacity to support future growth. As indicated in Table 6, the current minimum non-firm capacity required on BG Route is 276 MVA equivalent to 138MVA per circuit. The proposed HTLS conductor will provide a minimum summer pre-fault rating of 227MVA per circuit at a conductor operating temperature of 190°C providing additional capacity over the current requirement. This additional capacity, over and above that required to accommodate connected and (Gate 2) contracted generation, provides headroom for further developments in the area e.g. the connection of more than one of the existing Gate 1 projects detailed in Table 10 on a non-firm basis, or the prospective export requirements reflecting potential future embedded generation at local GSPs of 395 MVA (equivalent to 197.5 MVA per circuit), as indicated in Table 7. While Option 3 may not accommodate all Gate 1 projects detailed in Table 11 were these ultimately to progress to Gate 2, subject to the probabilistic Construction Planning Assumptions which would support any future Gate 2 assessment, it is considered to appropriately balance technical, economic and environmental considerations, providing a robust and future-proof network configuration, enhancing operational flexibility, and maintaining network operability.

Whilst some foundation strengthening and tower painting works are required to ensure the long-term integrity of the route, the cost and time needed to complete these works are minimal when compared to a full line rebuild. Furthermore, given the age of the existing infrastructure, some degree of foundation reinforcement and tower painting would be required for any reconductoring regardless of conductor choice. Lark ACCR Conductor has been identified as the highest rated conductor that can be used on the existing towers. Any larger capacity conductor such as Eagle, would require a full rebuild.

The works also include replacing the short cable section connecting the OHL route into Newton Stewart substation and assessment of the cable section connecting into Glenlee.

In addition to addressing network capacity requirements, this selected option also delivers the necessary replacement of deteriorating phase conductors and

earthwire, thereby addressing the project's shared-driver element. This avoids the need for separate future asset replacement interventions and improves whole-life efficiency for consumers.

From a sustainability perspective, the use of HTLS conductor supports future decarbonisation driven load growth without the need for reintervention, as the thermal capability provided is in excess of current requirements, providing room for future growth.

The total cost of this option is £48.12m including [redacted] risk.

5.2.4 Option 4a – Replace existing BG Route with a new L7 construction.

This option would involve the complete dismantling of the existing BG route and the construction of a new 132kV double circuit OHL "L7" tower type construction with twin 300mm^2 AAAC "Upas" conductor, together with the replacement of the cable section into Newton Stewart GSP. Twin Upas conductor would provide a rating of 352MVA.

The estimated total cost of these works is £81.06m including a [redacted] associated risk. This cost is based on an indicative route length and, at this time, no routeing studies have been undertaken to assess the viability of route options, which may impact the cost estimate.

In this situation, a full route rebuild is not considered a proportionate or efficient solution for this project. The existing tower line remains in serviceable condition, continues to provide value to the network, and does not require wholesale replacement to address either the asset condition or load-related drivers. Consequently, the demolition and reconstruction of the entire route would result in significant additional costs, delays and environmental impacts without delivering commensurate consumer benefits. The time frame in which this option would be completed is also far greater than that of a reconductoring, with a minimum timeline of approximately [redacted] years, assuming S37 consent is obtained within one year, delaying the completion date to around [redacted]. With Gate 2 Phase 1 projects mainly driving this reinforcement, this option would not be in the best interest of the Users, would not meet the contracted dates for the contracted parties and would not satisfy SPT's obligation to connect new generation in a timely manner to support UK's CP2030 targets.

Given that the required network outputs can be achieved through reconductoring and targeted tower reinforcement works, a full rebuild would represent an inefficient use of consumer funding.

5.2.5 Option 4b – Replace existing BG Route with two new wood pole constructions.

This option would involve dismantling the existing BG route in full and building two Trident routes with single HTLS conductor, as well as replacing the cable section connecting into Newton Stewart GSP. Two new trident wood pole constructions would have the structural capability to support Lark or Eagle conductor, with Lark giving a rating of 227MVA and Eagle giving 295MVA.

The approximate total cost of these works is £58.85m including a [redacted] associated risk. This cost is also based on an indicative route length and, at this time, no routeing studies have been undertaken to assess the viability of route options. Because of this, the cost could vary for this option if it were to be progressed through routeing. This cost assessment is based on the use of Lark as the conductor type. Eagle would incur greater costs.

In this situation, a rebuild is not considered a proportionate or efficient solution for this project. The existing tower line remains in serviceable condition, continues to provide value to the network, and does not require wholesale replacement to address either the asset condition or load-related drivers. Consequently, the demolition and reconstruction of the entire route would result in significant additional costs, delays and environmental impacts without delivering commensurate consumer benefits. The time frame in which this option would be completed is also far greater than that of a reconductoring, with a minimum timeline of [redacted] years, assuming S37 consent is obtained within one year, delaying the completion date to around [redacted]. With Gate 2 Phase 1 projects mainly driving this reinforcement, this option would not be in the best interest of the Users, would not meet the contracted dates for the contracted parties and would not satisfy SPT's obligation to connect new generation in a timely manner to support UK's CP2030 targets. Given that the required network outputs can be achieved through reconductoring and targeted tower reinforcement works, a full rebuild would represent an inefficient use of consumer funding.

5.2.6 Option 5 – Replace existing BG Route with 132kV underground cable circuits.

This option would involve the complete dismantling of the existing BG route and the construction of a new 132 kV underground cable route.

The total cost of this option is £166.92m including a [redacted] associated risk. This cost is also based on an indicative route length and, at this time, no routeing studies have been undertaken to assess the viability of route options. Because of this, the cost could change for this option if it were to be progressed through routeing. The cost of this option has assumed that 1600mm^2 Cu cable per phase is used, This cable choice would provide a similar rating to that of a Lark HTLS OHL Option.

However, this option is not considered an efficient or proportionate solution. The removal of the existing overhead line infrastructure and its replacement with an underground cable would result in significantly higher capital costs than the preferred option, without delivering commensurate additional network benefits. In addition, the installation of a new cable route would require extensive civil engineering works and additional planning and environmental consents, increasing both project delivery risk and programme duration.

5.3 Optioneering Justification

SPT has assessed a range of credible options to address both the increasing network capacity requirements associated with contracted generation connections and the asset condition needs identified on the existing BG route.
The options were evaluated against technical capability, compliance with network planning requirements, deliverability, environmental impact and consumer value. The preferred HTLS reconductoring option was selected as it is the only option that simultaneously addresses the identified capacity requirements, replaces end-of-life assets, utilises the existing transmission corridor, minimises environmental and consenting risks, and provides sufficient capacity headroom for future network growth. Accordingly, SPT considers the preferred option to represent the most efficient and proportionate solution and to deliver the best overall outcome for GB consumers.

A summary of the options considered is included in Table 12 with their system requirements and design parameters outlined in Table 13.

Table 12: 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 3: Reconductoring with a HTLS Conductor	Refer to Figure 4	N/A	N/A	N/A	There are limited consenting works as this option uses the existing tower route. This is a low-risk option from a consenting perspective as the only consents required would be land access to complete foundation works and conductor removal/pulling.	This option is the preferred solution as it efficiently addresses both the load-related and asset condition drivers while utilising the existing transmission corridor. The option delivers the required thermal capacity, provides headroom for future network growth, minimises environmental and delivery risks, and avoids the additional costs associated with full route rebuild options. This option also demonstrates PASE alignment and meets the requirements of efficiency, futureproofing, and consumer value.	N/A
Rejected – Option 1: Do Nothing / Defer	N/A	N/A	N/A	N/A	N/A	N/A	Inconsistent with SPT's various statutory duties and licence obligations.

Options	Map	Layout of Substation/ Connection	Layout of all Route Works	Relevant Survey Works	Narrative Consenting Risks	Narrative Preferred Option	Narrative Rejection
Rejected – Option 2: Do Minimum – Reconductor with like-for-like conductor type	N/A	N/A	N/A	N/A	There are limited consenting works as this option uses the existing tower route. This is a low-risk option from a consenting perspective as the only consents required would be land access to complete foundation works and conductor removal/laying.	N/A	Although it would address the underlaying asset condition requirements, the installation of a like-for-like conductor does not provide the thermal capability required to support new generation investment in the area.
Rejected – Option 4a: Rebuild the OHL Route with new L7 Construction	N/A	N/A	N/A	N/A	This is a high-risk option as Section 37 consent will be required for the construction of the new build. It may also require additional environmental assessments, i.e. Environmental Impact Assessment and stakeholder engagement, potentially resulting in programme delays and increased consenting complexity.	N/A	This option requires establishment of a new 132kV OHL circuit with a route length of approximately 30km, resulting in higher capital cost, greater environmental impact, increased consenting requirements and longer delivery timescales than the preferred reconductoring solution without delivering proportionate additional consumer benefit. It also requires the replacement of serviceable tower infrastructure representing an inefficient use of consumer funding.

Options	Map	Layout of Substation/ Connection	Layout of all Route Works	Relevant Survey Works	Narrative Consenting Risks	Narrative Preferred Option	Narrative Rejection
Rejected – Option 4b: Rebuild the OHL Route with two new wood pole construction	N/A	N/A	N/A	N/A	This is a moderate to high-risk option as Section 37 consent will be required for the construction of the new build. It may also require additional environmental assessments, i.e. Environmental Impact Assessment and stakeholder engagement, potentially resulting in programme delays and increased consenting complexity.	N/A	This option requires establishment of two new 132kV OHL circuits with a route length of approximately 30km each, resulting in higher capital cost, greater environmental impact, increased consenting requirements and longer delivery timescales than the preferred reconductoring solution while delivering comparable network outputs. It also requires the replacement of serviceable tower infrastructure representing an inefficient use of consumer funding.
Rejected – Option 5: Rebuild as a cable route	N/A	N/A	N/A	N/A	This is a high-risk option as consents may be required for the new underground cable route. The larger construction footprint and potential impacts on habitats and local communities may also require additional environmental assessments, i.e. Environmental Impact Assessment and stakeholder	N/A	The installation of underground cable within a project must balance economic, technical, and environmental considerations. The removal of the existing overhead line infrastructure and its replacement with an underground cable would result in significantly higher capital costs than the preferred option, without delivering commensurate additional network benefits. In addition, the installation of a new cable route would require extensive civil engineering works

Options	Map	Layout of Substation/ Connection	Layout of all Route Works	Relevant Survey Works	Narrative Consenting Risks	Narrative Preferred Option	Narrative Rejection
					engagement, potentially resulting in programme delays and increased consenting complexity. There is also a high likelihood that a planning application would be necessary.		and additional planning and environmental consents, increasing both project delivery risk and programme duration.

Table 13: System Requirements and Design Parameters for the considered options

SYSTEM DESIGN TABLE	CIRCUIT/ PROJECT	**PREFERRED – OPTION 3:** RECONDUCTORING WITH HTLS CONDUCTOR	**REJECTED – OPTION 1:** DO NOTHING / DEFER	**REJECTED – OPTION 2:** RECONDUCTOR WITH LIKE-FOR-LIKE CONDUCTOR	**REJECTED – OPTION 4A:** REBUILD FULL OHL ROUTE WITH NEW L7 CONSTRUCTION	**REJECTED – OPTION 4B:** REBUILD FULL OHL ROUTE WITH TWO NEW WOOD POLE CONSTRUCTION	**REJECTED – OPTION 5:** REBUILD AS UNDERGROUND CABLE ROUTE
Thermal and Fault Design	Existing Voltage (if applicable)	132kV	132kV	132kV	132kV	132kV	132kV
	New Voltage	N/A	N/A	N/A	N/A	N/A	N/A
	Existing Continuous Rating (if applicable)	89MVA	89MVA	89MVA	89MVA	89MVA	89MVA
	New Continuous Rating	227MVA (Summer rating)	89MVA (Summer Rating)	155MVA (Summer Rating)	352MVA (Summer Rating)	227MVA (Summer Rating)	233MVA (Summer Rating)
	Existing Fault Rating (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A
	New Fault Rating	20/25kA	N/A	20/25kA	20/25kA	20/25kA	20/25kA
ESO Dispatchable Services	Existing MVAR Rating (if applicable)	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
	Existing GVA Rating (if applicable)	N/A	N/A	N/A	N/A	N/A	N/A

SYSTEM DESIGN TABLE	CIRCUIT/ PROJECT	**PREFERRED – OPTION 3:** RECONDUCTORING WITH HTLS CONDUCTOR	**REJECTED – OPTION 1:** DO NOTHING / DEFER	**REJECTED – OPTION 2:** RECONDUCTOR WITH LIKE-FOR-LIKE CONDUCTOR	**REJECTED – OPTION 4A:** REBUILD FULL OHL ROUTE WITH NEW L7 CONSTRUCTION	**REJECTED – OPTION 4B:** REBUILD FULL OHL ROUTE WITH TWO NEW WOOD POLE CONSTRUCTION	**REJECTED – OPTION 5:** REBUILD AS UNDERGROUND CABLE ROUTE
	New GVA Rating	N/A	N/A	N/A	N/A	N/A	N/A
System Requirements	Present Demand (if applicable)	7.2MW (minimum)	7.2MW (minimum)	7.2MW (minimum)	7.2MW (minimum)	7.2MW (minimum)	7.2MW (minimum)
	2050 Future Demand	N/A	N/A	N/A	N/A	N/A	N/A
	Present Generation (if applicable)	155.3MW	155.3MW	155.3MW	155.3MW	155.3MW	155.3MW
	Future Generation Count	10	10	10	10	10	10
	Potential Future Generation Capacity	114MW (based on Gate 2 only as per Table 6)	114MW (based on Gate 2 only as per Table 6)	114MW (based on Gate 2 only as per Table 6)	114MW (based on Gate 2 only as per Table 6)	114MW (based on Gate 2 only as per Table 6)	114MW (based on Gate 2 only as per Table 6)
Initial Design Considerations	Limiting Factor	N/A	N/A	It does not meet the thermal limits required to support new generation investment 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	N/A	N/A	N/A	N/A	N/A	N/A
	Busbar Design	N/A	N/A	N/A	N/A	N/A	N/A
	Cable/ OHL/ Mixed	OHL	OHL	OHL	OHL	OHL	Cable

SYSTEM DESIGN TABLE	CIRCUIT/ PROJECT	**PREFERRED – OPTION 3:** RECONDUCTORING WITH HTLS CONDUCTOR	**REJECTED – OPTION 1:** DO NOTHING / DEFER	**REJECTED – OPTION 2:** RECONDUCTOR WITH LIKE-FOR-LIKE CONDUCTOR	**REJECTED – OPTION 4A:** REBUILD FULL OHL ROUTE WITH NEW L7 CONSTRUCTION	**REJECTED – OPTION 4B:** REBUILD FULL OHL ROUTE WITH TWO NEW WOOD POLE CONSTRUCTION	**REJECTED – OPTION 5:** REBUILD AS UNDERGROUND CABLE ROUTE
	SI	This scheme provides additional capacity to enable future development of network in the region.	N/A	N/A	This scheme provides additional capacity to enable future development of network in the region.	This scheme provides additional capacity to enable future development of network in the region.	This scheme provides additional capacity to enable future development of network in the region.

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

As this is a PASE aligned solution, a CBA is not required at this stage.

6 Proposed Works

6.1 Project Summary

The proposed solution involves the replacement of the existing Lynx conductor with a High-Temperature Low-Sag (HTLS) conductor, Lark ACCR or equivalent, along the Newton Stewart–Glenlee 132 kV double circuit route as well as replacement of the cable section connecting into Newton Stewart GSP, as can be seen in Figure 4 below. This intervention will significantly increase the thermal capacity of the existing overhead line while retaining the current tower infrastructure and established transmission corridor. Furthermore, due to the existing conductor and earthwire requiring replacement due to their asset health deteriorating, the proposed works would ensure the longevity of the circuit from a non-load perspective.

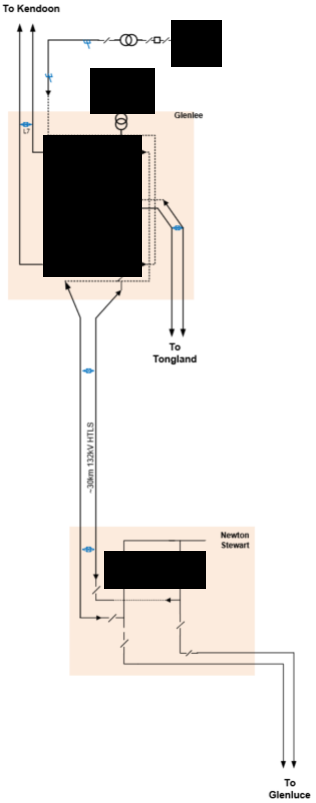


Figure 4: Single Line Diagram of Proposed BG Route Reconductoring

The following works are required to for preferred Option 3:

- Re-conductor both circuits between BG001-102 with single Lark 250mm^2 ACCR HTLS Conductor or equivalent at 132kV.
- Replace earthwire with a single "Horse" 70mm^2 AACSR equivalent OPGW.
- Replace insulators on the GLLE-NETS-1 circuit. The condition of insulators on the GLLE-NETS-2 should be reassessed during reconductoring works.
- Replace all tension and suspension conductor end fittings.
- Replace earthwire fittings.
- Replace tower muff foundations where required.
- Upgrade foundations where deemed necessary.
- Replace downleads and fittings at Newton Stewart and Glenlee substations.
- Replace heavily corroded or damaged steelwork (above category 4).
- Painting at all towers.
- Update all OHL records to reflect the works carried out.
- Carry out condition assessments on sections of removed conductor.
- Provide report to the Asset manager to include condition of all redundant conductors, steelwork and foundations along with associated tests logs for existing/new concrete.
- Replacement of cable section at end of OHL, connecting into Newton Stewart Substation.
- Assessment of the rating of the cable section connecting into Glenlee Substation.

6.1.1 Statutory Planning Consents

There are no further statutory planning consents required to complete this project.

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 Estimated Total Project Cost

An estimated cost of the project, breakdown by asset type and activity has been included in Table 14 below:

Table 14: Project Cost Breakdown

Item	Description	Estimated Capex (£m 23/24 prices)
1	[redacted]	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
	Total	**48.12**

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

Aligned with the format of the Load Board Pipeline, Table 15 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 15: Estimated Incidence of Expenditure

Estimated Total Direct Project Cost per year, £m, 23/24 price base								
Energisation Year	**RIIO-T2**	**Yr. 26/27**	**Yr. 27/28**	**Yr. 28/29**	**Yr. 29/30**	**Yr. 30/31**	**Yr. 31/32**	**Total (£m)**
2030	-	0.57	8.24	16.16	17.37	5.78	-	48.12

Whilst shared infrastructure assets are ultimately funded by the GB consumer, ahead of energisation, developers 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.

To date this project has spent approximately [redacted], which will be recoverable via securities on acceptance from the affected developers, or borne by the GB consumer should all developers dependent on these works not progress.

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 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's 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

A standard approach has been applied to the planning phase of these works and that will continue for the reporting and the application of processes and controls

throughout the lifecycle. Table 16 below summarises the key milestones within the delivery schedule of this project.

Table 16: Summary of Project Key Milestones

Milestone	Description	Completion Date
1	Provision of Planning Consents for TORI Works	N/A
2	Contract award	August 2028
3	Transmission Works Commencement date	August 2028
4	Project assessment submission	October 2028
5	Transmission Works Completion Date	October 2030
6	TO Commissioning Programme	October 2030
7	Completion Date (Project Closure)	March 2031

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 "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 are 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 (that is noted in Section 8.3 below).

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, and 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 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 & 45001
- 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 17 below provides a breakdown of the top five project risks followed by further detailed explanation regarding mitigation and likelihood.

Table 17: Key Delivery Risks and Mitigations

Risk	Description	Probability	Mitigation
[redacted]			

8.4 Environmental Considerations / Environmental Sustainability

8.4.1 Environmental Planning

The following environmental surveys will require to be carried out prior to any work commencing on site:

- Ecology: Phase 1 habitat survey
- Ecology: Protected species survey
- Archaeology: Desktop based survey
- Archaeology: Field evaluation*
- Archaeology: Watching brief for any ground-breaking works within identified areas*

**may only be required if any proposed ground-breaking works encroach on areas of interest*

The intention should be to use low bearing pressure vehicles where possible. Access routes and formation may be supplementary to existing roads and tracks and should use sustainable materials which can be reutilised where possible. Any compaction of ground should be rectified.

8.4.2 Environmental Sustainability

IMS-01-001 encompasses all activities undertaken within and in support of SP Energy Networks three Licences. This includes operational and business support functions concerned with management of SP Transmission, SP Distribution and associated regulatory and commercial interfaces, products, services, and their associated environmental, social, and economic impacts. The policy makes the following commitments which shall be respected in any works associated with this scheme.

SP Energy Networks will incorporate environmental, social, and economic issues into our business decision-making processes, ensuring compliance with or improvement upon legislative, industry, regulatory and other compliance obligations. We will deliver this by being innovative and demonstrating leadership on the issues which are important to us and our stakeholders, and will:

- Ensure the reliability and availability of our Transmission and Distribution network whilst creating value and delivering competitiveness by increasing efficiency and minimising losses.
- Reduce greenhouse gas emissions in line with our Net Zero Science Based GHG target, which is a target of 90% reduction in GHG emissions by 2035 (TBC) from a 2018/19 baseline.

- Integrate climate change adaptation requirements into our asset management and operations processes to support business resilience and reduce the length and time of service interruptions.
- Consider whole life cycle impacts to reduce our use of resources to sustainable levels, improve the efficiency of our use of energy and water and aim for zero waste.
- Improve land, air, and watercourse quality by preventing pollution and contamination and protecting and enhancing biodiversity in our network areas.
- Improve our service to local communities, supporting their economic and social development, protecting vulnerable customers, and respecting human rights.

ENV-04-014 gives specific guidance on the management of incidents with environmental consequence, or potential for environmental consequences, over and above the general requirements for the management of incidents.

The proposed design solution is also resilient to future climate change risks, such potential faults from vegetation along the route.

In SPEN to reduce the number of vegetation related OHL faults, the route will be surveyed, consented, and cut on a per kilometre basis. The cutting specification entails:

- Falling distance plus 5m (i.e., Vicinity Zone) to the conductor and maintain 5 years clear from that distance.
- Clearance as 5.3m to be achieved from conductor positioned at 45° blowout and maximum sag condition. Maintain 5 years clear from that distance.
- All vegetation directly below the OHL with the potential to breach the Vicinity Zone before the next cut cycle shall be removed.
- Hedgerows shall be maintained. Species identified with no threat to breach the Vicinity Zone at any point in the future shall continue to be managed as part of the 3-year vegetation management programme.
- Tower bases shall be kept free of all scrub to a distance of 5m from the base.

OHL-03-080 gives detailed specification for OHL vegetation management in SPEN.

8.5 Stakeholder Engagement

SPT is committed to delivering optimal solutions in all of the projects we undertake. A key part of this is engaging with relevant stakeholders throughout the project development and delivery process. Stakeholders can include customers, regulatory bodies and other statutory consultees, national and local government,

landowners, community groups, and local residents and their representatives (e.g., MPs, MSPs and councillors).

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

9 Incentives

9.1 Major Project ODI eligibility

Based on the criteria in the Major Projects ODI-F Governance Document for non-CSNP Re-opener projects (section 2.7), this project can be described as of strategic importance due to the generation projects driving the works described within this paper being aligned with the UK's CP2030 targets, having been assigned as Gate 2 Phase 1 under Connections Reform. However, at the Eligibility Letter stage, the project is not yet sufficiently developed to determine a P50 date or have cost maturity, therefore we believe that the application of an ODI-F for this project should be reassessed at the time of Project Assessment submission, where more information will be available.

10 Appendices

Table 18: 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 1 - RIIO-T3 LSpC 3.11 Generation Connections Volume Driver Allowance

[redacted]

	Regulatory Year
Commissioning Date	2031

Commisioning Date
[redacted]/10/2030

[redacted]

Appendix 2: Asset Possibilities Breakdown

