Transmission Owner Reinforcement Instruction (TORI) Quarterly Update Report



View of the 275kV WA Overhead Line between Coylton and New Cumnock substations





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DWNO	<u>SPT-RI-003 – Upgrade existing circuits and establish a new route</u> <u>between Bonnybridge and Glenmavis</u>
Upgrade existing	OVERVIEW OF WORKS circuits and establish a new route between Bonnybridge and Glenmavis
Programme	Completion: - 2030
Progress	 Current stage(s): Design and development, Consenting, Ofgem project assessment, Procurement Next stage: Procurement start date



V2.12 SPT-RI-028 - ZT route Overhead Line Uprating Works (Branxton – Eccles) OVERVIEW OF WORKS Dalmally 275kV Extension & Dalmally-Windyhill 275kV Uprating	
Programme	Completion: - Under Review
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC



E2DC	and Hawthorn Pit (Eastern Green Link 1)
5000	SPT-RI-124, 126 & 267 - New offshore HVDC link between Torness

OVERVIEW OF WORKS

124: - A new 400kV double busbar substation, utilising Gas Insulated Switchgear (GIS), will be established in the vicinity of Torness. This new substation, known for the purposes of this TO Reinforcement Instruction as 'Branxton 400kV Substation', and associated plant and apparatus, will provide Transmission Interface Points to which transmission connection system assets will connect.

126: - Development, design construction and commissioning of a 2GW 525kV HVDC link between the Torness area in East Lothian Scotland, and Hawthorn Pit in North-East England. Link consisting of 2 x HVDC 400kvAC/ 525kvDC converter station terminals and installation of an approximate 200km of offshore and onshore cabling. Completion of associated AC onshore connections North & South and network reinforcement works with NGETs 400kv Network.

Under the LOTI approval process the Final Needs Case has been submitted and approved on with the Project Assessment submission.

267: - In order maintain to post-fault voltages within statutory limits, the installation of voltage control in the east of the network is required. As such, dynamic shunt compensation will be installed at Eccles 400kV substation with associated switchgear.

Programme	Completion: - 2029
Progress	Current stage(s): Construction Next stage: Construction end date Link to related info:



VSRE	<u>SPT-RI-130 – Replace the conductors on the existing circuit</u> between Strathaven and Smeaton with higher capacity conductors			
The overhead line of	OVERVIEW OF WORKS			
	erhead line conductor system on the existing 11.6km 400,000 Volt double circuit route from Strathaven aw (XH route) will be replaced with a conductor system of increased thermal rating.			
Programme	Completion: - 2027			
Progress	Current stage(s):			
	 Design and development, Consenting, Ofgem project assessment, Procurement 			
	Next stage:Procurement start date			



<u>V2.3</u>	<u>SPT-RI-131 - ZT route Overhead Line Uprating Works (Branxton –</u> Eccles)
the Branxton sealing The existing ZT over 75oC. The maximum	OVERVIEW OF WORKS onductor system on the existing 34.3km 400,000 Volt double circuit route from Eccles to end compound (ZT route) will be uprated to achieve an increased thermal rating. head line route is equipped with twin 700mm2 AAAC (Araucaria) conductor operating at operating temperature of the conductor system will be increased from 75oC to 90oC.
I nese works will not	modify the prevailing circuit configuration.
Programme	Completion: - 13 th April 2028
Progress	Design: • Early Design and Surveys Ongoing Consenting: • Surveys ongoing Detailed Engineering: • Still to commence Tendering: • Still to commence Construction: • Still to Commence Commissioning/Close Out: • Still to commence



<u>V2.0</u>	SPT-RI-146 - Maybole to Coylton 132kV Overhead Line Uprating			
	OVERVIEW OF WORKS e generation at Maybole GSP has reached a level where the thermal uprating of the n Maybole and Coylton is required to facilitate this generation.			
circuit tower lines, sir sections (~1km total)	its between Maybole and Coylton are on a mixture of double circuit tower lines, single ngle circuit wood pole overhead lines and incorporates three 132kV underground cable . The total route length is 22.5km and consists of CD Route (13km double circuit), CG rcuit), N Route (5km single circuit) and X Route (4.5km double circuit).			
The existing overhea	d line circuits are single 175mm ACSR with a pre-fault summer rating of 89MVA.			
overhead line circuits continuous rating of 2	e generation at Maybole GSP it is proposed that the existing Maybole to Coylton 132kV s are reconductored using LARK HTLS conductor. This gives a summer pre-fault 227MVA. In addition, the three 132kV underground cable sections on the circuit (~1.2km ced with 1600mm2 AI XLPE cable to match the new rating of the overhead line.			
Needs case carried c	out and TORI no longer required.			
Programme	Completion: - Active Termination			
Progress	Design: • N/A			
	Consenting: • N/A			
	Detailed Engineering: • N/A			
	Tendering: • N/A			
	Construction: • N/A			
	Commissioning/Close Out: • N/A			



<u>V2.0</u>	SPT-RI-151b - Ga	SPT-RI-151b - Galashiels to Eccles 132kV Overhead Line Rebuilding						
OVERVIEW OF WORKS The existing two 132kV circuits between Galashiels and Eccles are on a mixture of double circuit tower lines single circuit tower lines and two 132kV underground cable sections (for the overhead line termination at each end). (The circuits are made up of part of P Route and AT Route U Route overhead lines). The Galashiels to Eccles No.1 and No.2 132kv overhead lines are single 175mm2 ACSR, with a pre fault summer rating of 89MVA, each with a total circuit length of 30.58km and 30.14km respectively. In order to provide GBSQSS compliant connections for additional generation requiring to export from Hawick/Galashiels to Eccles, it is proposed to construct a new 132kV double circuit tower line between Galashiels and Eccles and remove the existing U and AT Routes. The new double circuit, utilising UPAS conductor, will provide the following minimum circuit ratings:								
		Win	ter	Autu	ımn	Sum	mer	
		Amps	MVA	Amps	MVA	Amps	MVA	
	Pre-Fault Continuous	885	203	845	193	770	176	
	Post-Fault Continuous	1060	241	1000	230	915	210	
Programme Progress	Completion: Date un Design:	der revie	W					
	Consenting: Public consult Planning appl Environmenta Detailed Engineering Design Freeze 1st co 2nd is Tendering: Still to Comme Construction: Still to comme	 Consenting: Public consultation took place September 2021. Planning application submission expected by Jan-2025. Environmental scoping report submission to ECU completed. Detailed Engineering: Design Freeze 1st completed in April-2023. 2nd is expected by Q2-2025. Tendering: Still to Commenced. 						



<u>V2.6</u>

SPT-RI-158 - New Cumnock 132kV Substation Extension

OVERVIEW OF WORKS

Contracted renewable generation in South West Scotland has reached a level where the thermal rating of the New Cumnock 275kV substation supergrid 275/132kV transformers, which currently planned to connect to 132kV Board A, is exceeded. There is also a fault level issue triggered by the current contracted generation on the New Cumnock 132kV Board A. In order to mitigate these issues, it is proposed to separate Board A into Boards A and C whereas Board B remains the same. Cabling and transformer connections for Boards A and B will also be reconfigured as follows:

- Board A: 3 x 275/132kV SGT1A, SGT2A and SGT3A 240MVA auto wind transformers, providing a total firm capacity of 720MVA
- Board B: 3 x 275/132kV SGT1B, SGT2B and SGT3B 240MVA auto wind transformers, providing a total firm capacity of 720MVA
- Board C: 2 x 275/132kV SGT1C and SGT2C 360MVA auto wind transformers, providing a total firm capacity of 360MVA

This will provide sufficient transformer capacity for the current overall contracted generation into New Cumnock (the contracted generation position in South West Scotland as indicated in December 2018).

Programme	Completion: - May 2025
Progress	Design: • TBA
	Consenting: • TBA
	Detailed Engineering: • TBA
	Tendering:TBA
	Construction: • TBA
	Commissioning/Close Out: • TBA



<u>V2.9</u>	SPT-RI-173 - Glenglass to Glenmuckloch 132kV OHL		
extended from Gleng double circuit betwee proposed GIS substa then construct aroun	OVERVIEW OF WORKS action of generation around the Glenmuckloch area, the 132kV network need to be glass substation to Glenmuckloch. To achieve this it is proposed to build a new 132kV en Glenglass and Glenmuckloch. The project will mainly entail the extension of the ation at Glenglass to add two new bays to which the 132kV double circuit will connect, at 10km of steel lattice towers to Glenmuckloch and at Glenmuckloch establish a 132kV etor substation to terminate the OHL double circuit.		
Programme	Completion: - June 2027 – Under Review		
Progress	 Design: OHL Route agreed – 132kV substation layout agreed Consenting: Section 37 consent obtained Land rights in progress Detailed Engineering: Still to be commenced Tendering: Detailed Engineering: Still to be commenced Construction: Detailed Engineering: Still to be commenced Construction: Detailed Engineering: Still to be commenced Construction: Detailed Engineering: Still to be commenced 		



<u>V2.6</u>	SPT-RI-176 - New Cumnock Overload Protection Scheme			
protection scheme is Coylton, supergrid tra transmission system	OVERVIEW OF WORKS In capacity at New Cumnock and the 132kV network in South West Scotland an overload required at New Cumnock substation to monitor the loading on the 275kV circuits from ansformers and 132kV circuits at New Cumnock to prevent any overloading on the . The scheme at New Cumnock will communicate with remote systems at Dunhill, and Kendoon substations to trigger tripping signals to generators connected at these			
Programme	Completion: - March 2025			
Progress	 Design: Early engineering design phase - complete Consenting: No consents required. Detailed Engineering: Complete Tendering: Completed – all major Contracts awarded. Construction: Panel manufacturing & FAT complete and panels delivered to site. Wiring and installation Completed. Commissioning/Close Out: Commissioning of Board A complete. Commissioning of Board C to commence following commissioning of TORI 158 work In Q2 2025. 			



	SPT-RI-185 - Galashiels to Eccles 132kV Overload Protection				
<u>V1.5</u>	<u>Scheme</u>				
	OVERVIEW OF WORKS				
to monitor the followi					
,	e Eccles No.1 132kV Circuit				
Installation of an LMS	S Outstation at Hawick 132/33kV substations in order to receive a trip signal from sonal pre-fault rating of these circuits is exceeded a trip signal will be issued to SPD at				
Hawick 132/33kV sul	bstation to disconnect appropriate SPD generation to remove the overload.				
Programme	Completion: - October 2025				
Progress	Design:				
	Still to be commenced.				
	Consenting:				
	Still to be commenced.				
	Detailed Engineering:				
	Still to be commenced.				
	Tendering:				
	Still to be commenced.				
	Construction:				
	Still to be commenced.				
	Commissioning/Close Out:				
	Still to be commenced.				



<u>V2.1</u>	SPT-RI-186 - Kilmarnock South SGT1(T2)(6) Overload Protection
	Scheme
	OVERVIEW OF WORKS

With the reinforcements at Kilmarnock South as detailed in "SPT-RI-143 Kilmarnock South 400kV and 275kV uprating" and withdrawal of the reinforcements in instruction "SPT-RI-147 Kilmarnock South to Coylton 275kV Reinforcement and Associated Works" the conditions that were originally associated with TORI 186 need to be modified. To maintain security of supplies and prevent unacceptable overloading on the transmission system a load management scheme (LMS) is required at Kilmarnock South. The aim of the LMS is to ensure for the planned or unplanned unavailability of two out of the three 400/275kV 1000MVA supergrid transformers at Kilmarnock South the remaining transformer is not overloaded. The conditions that will cause this are:

- 1. A planned outage on one transformer followed by a fault on another.
- 2. A switch fault on circuit breaker X120.

Programme	Completion: - October 2030
Progress	Design:
	Still to commence
	Consenting:
	Still to commence
	Detailed Engineering:
	Still to commence
	Tendering:
	Still to commence
	Construction:
	Still to commence
	Commissioning/Close Out:
	Still to commence



<u>V2.3</u>

SPT-RI-191 - Gretna-Ewe Hill 132kV Reinforcement

OVERVIEW OF WORKS

The thermal capacity of the 132kV circuit between Gretna 132kV substation and Ewe Hill Wind Farm 132kV Collector Substation (works detailed in SPT-RI-017), will be increased by re-conductoring the 132kV overhead line utilising "Eagle" High Temperature Low Sag (HTLS) conductor (~16km), and replacing the existing 800mm2 AI XLPE with 2000mm2 AI XLPE 132kV underground cable (~0.3km), to give a minimum summer continuous rating of 295MVA. This is to accommodate additional generation connecting at the Ewe Hill Wind Farm 132kV Collector Substation.

Programme	Completion: - Under Review
Progress	Design: • TBC
	Consenting: • TBC
	Detailed Engineering: • TBC
	Tendering: Detailed Engineering: • TBC
	Construction: Detailed Engineering: • TBC
	Commissioning/Close Out: • TBC



<u>V2.2</u>	SPT-RI-198 - Newton Stewart 132kV Substation Works			
OVERVIEW OF WORKS At Newton Stewart 132/33kV substation, a second 132/33kV transformer will be installed as part of a separate project in order to accommodate contracted generation on a firm basis. To enable the transformer installation, substation works are required involving a new 132kV line isolator to connect the second grid transformer onto the existing T2 33kV circuit breaker.				
Programme	Completion: - September 2025			
Progress	Design: • Complete Consenting: • N/A Detailed Engineering: • Complete Tendering: • Complete Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced			



N/4 E	SPT-RI-204 - Wishaw-Smeaton-Torness-Eccles Overload Protection
<u>V1.5</u>	Scheme
	OVERVIEW OF WORKS
network to protect Category 4 Intertrip	load protection scheme is proposed to be installed within the Wishaw – Smeaton 400kV the system from network overload under certain outage conditions and as part of a pping Scheme to protect the Wishaw – Smeaton – Torness – Eccles 400kV Network from conditions as defined by the Grid Code for Nerat Na Gaoithe and Fallago 2 Connection.
Programme	Completion: - November 2024
Progress	Design: • Complete
	Consenting: Not required
	Detailed Engineering:Complete.
	Tendering:Contracts awarded.
	 Construction: Commenced August 2021, NNG related implementation complete. Fallago 2 related implementation yet to commence.
	 Commissioning/Close Out: Commissioning substantially complete with final operational testing to be completed in conjunction with NNG project commissioning. Fallago 2 elements of works to be undertaken Q4 2024 and made ready for interfacing in conjunction with Fallago 2 connection at later date.



<u>V2.25</u>	2.25 SPT-RI-205 - Arecleoch Ext Tee to Chirmorie/Stranoch Wind Farm 132kV Circuit		
OVERVIEW OF WORKS			
A \sim 4 7km 132kV overhead line will be installed from the Arecleoch Extension wind farm tee to the			

A ~4.7km 132kV overhead line will be installed from the Arecleoch Extension wind farm tee to the Chirmorie/Stranoch junction. The circuit will use standard 43:50 Trident with HTLS 3M 'Lark' ACCR conductor which has the following circuit ratings:

Winter		Autumn			Summer	
Amps	MVA	Amps	M	VA	Amps	MVA
Pre-Fault Continuous	1040	237	1020	234	995	227
Post-Fault Continuous	1240	285	1220	280	1180	270

The underground cable will be sized to match the ratings of the overhead line.

Programme	Completion: - October 2026
Programme Progress	Completion: - October 2026 Design: • Overview design complete and approved as part of S37 consent Consenting: • S37 approved, only two construction start pre-conditions pending discharge. These only impact works in the D&G council area. Detailed Engineering: • In progress with appointed OHL contractor Tendering: • OHL contract awarded. Tree-felling contract awarded. No further contracts expected to be required. Construction:
	 Expect tree felling works to commence in May-25 OHL CDM site set-up and material preparation works in progress. Expect pole construction works to commence from May-25. Commissioning/Close Out:
	Still to commence.



<u>V2.3</u>	SPT-RI-206 - Mark Hill SGT3 240MVA			
OVERVIEW OF WORKS At Mark Hill substation a 275kV switchbay will be installed to control a 275/132kV 240MVA transformer (SGT3). This will connect to a 132kV busbar (B Board) provided for the connection of renewable generation.				
Programme	Completion: - January 2027			
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC			



<u>V2.7</u>	<u>SPT-RI-211 - Holm Hill Switching Station to Lorg Wind Farm</u> Junction 132kV Circuit		
site and the tee off p At an appropriate tee 132kV Switching Sta ~8km of 132kV wood	OVERVIEW OF WORKS kV switching station, named Holm Hill, and install a 132kV OHL circuit between the new oints to Shepherds Rig and Lorg wind farms. e-off point on the New Cumnock to Kendoon 132kV circuit, install the new Holm Hill tion containing one 132kV circuit breaker with two associated disconnectors. Install d pole overhead line with High Temperature Low Sag (HTLS) EAGLE conductor (190°C, e-fault rating 295MVA) to the tee point between Shepherd's Rig and Lorg wind farms.		
Programme	Completion: - November 2027		
Progress	 Design: Early design in progress. OHL route design in progress. Holm Hill switching station design in progress. Consenting: S37 under final review before being issued to the ECU Q2 2025. Planning Consent for Holm Hill switching station in progress. Detailed Engineering: Commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced 		



At New Cumpock	OVERVIEW OF WORKS substation a third 275/132 240MVA transformer will be installed to increase the capacity of
the 132kV Board	
Programme	Completion: - March 2025
Progress	Design:
	Design complete.
	Consenting:
	Not Applicable (will be delivered under SPEN's Permitted Development rights).
	Detailed Engineering:
	Complete barring minor elements.
	Tendering:
	 Contract awarded and supplier engaged for 240 MVA transformer with manufacture underway.
	Civil tender ongoing:
	132KV cable tender issued to the market.
	Construction:
	Still to be commenced
	Commissioning/Close Out:
	Still to be commenced



V	2	.2	

SPT-RI-221 - Kendoon to Glenlee 132kV reinforcements

OVERVIEW OF WORKS

The works in this reinforcement entails the extension of the L7 high capacity (twin UPAS) 132kV double circuit that runs between New Cumnock substation and the Margree Tee off in South West Scotland to Glenlee substation. This will enables the increase of transfer capability from the Galloway group to the wider supergrid system at New Cumnock. The transfer capability of the group is currently limited by the single 132kV Lynx circuit between Kendoon and Tongland. At Glenlee the substation will need to be extended to modify the configuration of the substation from a four to a six mesh corner arrangement to allow the termination of the new high capacity double circuit overhead line from New Cumnock. One side of the circuit will also be turned into Kendoon to maintain connectivity at the substation.

Winter		Autumn			Summer	
Amps	MVA	Amps	M	VA	Amps	MVA
Pre-Fault Continuous	1781	407	1680	384	1573	352
Post-Fault Continuous	2120	485	2000	457	1830	418

Completion: - August 2028
Design: • TBC
Consenting: • TBC
Detailed Engineering: • TBC
Tendering: • TBC
Construction: • TBC
Commissioning/Close Out: • TBC



<u>V2.3</u>	SPT-RI-222 - Glenlee to Tongland 132kV Modernisation
from Glenlee to Tong supergrid system at I transfer capability of	OVERVIEW OF WORKS dernisation entails the construction of a new L4 (single POPLAR) 132kV double circuit gland. This will enable the increase of transfer capability from Tongland to the wider New Cumnock and increase the local boundary capabilities of the 132kV system. The Tongland is currently limited by the single 132kV Lynx circuit between Glenlee and heme will remove this limitation.
Programme	Completion: - August 2029
Progress	Design:Tender design in progress
	 Consenting: OHL Section 37 Planning Consent application was rejected by the Council committee on 14 Apr 2021. Project is progressing with public inquiry (PLI) option. Planning team have formally notified the matter to Michael Matheson MSP. Proceedings ongoing.
	Detailed Engineering:Underway.
	Tendering:
	 Tongland*: Civil Works – On hold pending Public Inquiry outcome. Balance of Plant (BoP) – On hold pending Public Inquiry outcome.
	 OHL* (Combined purchase with TORI 221) – 2024 - Delayed due to Sec 37 public inquiry (PLI).
	 132kV OHL Trident Wood Poles* (combined purchase with TORI221) Contract award – 2024 - Delayed due to Sec 37 PLI.
	 Conductor Supply / OPGW* – 2024 - Delayed due to Sec 37 PLI.
	Construction: Still to be commenced
	 Commissioning/Close Out: Scheduled for August 2027 – delays due to Sec 37 PLI.



<u>V1.1</u>	SPT-RI-223 - Glenlee to Newton Stewart Reconductoring			
OVERVIEW OF WORKS The existing No.1 and No.2 132kV circuits between Glenlee and Newton Stewart substations are on a double circuit tower line (~ 30km, BG route). The overhead line circuits are single 175mm2 ACSR with a pre-fault summer rating of 89MVA. To facilitate increasing levels of generation at Glenluce and Newton Stewart GSP, it is proposed to reconductor BG route with High Temperature Low Sag conductor (HTLS) to provide a minimum summer pre-fault continuous rating of 250MVA.				
Programme	Completion: - October 2023			
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC			



<u>V1.0</u>	SPT-RI-224 - Coylton SGT1(2) Reinforcement	
OVERVIEW OF WORKS At Coylton substation, the existing SGT1 and SGT2 275/132kV 120MVA Auto-transformers will be replaced (on line) with 240MVA units.		
Programme	Completion: - Works complete	
Progress	 Design: Complete Consenting: Not Applicable Detailed Engineering: SCA signed off and approved with detail engineering commenced. Tendering: Complete Construction: Complete Complete Commissioning/Close Out: Complete 	



<u>V2.5</u>	SPT-RI-226 - 275/132kV Elvanfoot Transformer	
OVERVIEW OF WORKS A new 275/132kV 360MVA transformer shall be installed at Elvanfoot substation. This will create a new 132kV busbar at Elvanfoot, to allow new generators to connect.		
Programme	Completion: - August 2025	
Progress	 Design: Complete Consenting: Complete Detailed Engineering: Complete Tendering: Transformer order placed. Main contracts awarded. Construction: Commenced and ongoing. Commissioning/Close Out: On track for August 2025 Link to related info: 	



<u>V2.2</u>

SPT-RI-227 - Chapelcross – Harker 132kV Uprating

OVERVIEW OF WORKS

It is proposed to rebuild AK and T Route single circuit Chapelcross to Harker 132kV overhead line, to increase the thermal rating to a minimum summer pre-fault continuous rating of 227MVA. The current circuit is a 132kV overhead tower line, with Lynx conductor, with a pre-fault summer continuous rating of 89MVA. This project is in response to the increased level of generation in the area.

The 132kV overhead line circuit between Chapelcross and Harker has split ownership, 17.5 km from Chapelcross 132kV substation following AK and T route, to tower T137A. This is owned by SPT with the remaining 8.6 km from tower T137A to Harker 132kV substation owned by NGET. Any uprating by SPT will need to be matched by NGET.

The project will be to rebuild the SPT-owned 17.5km of AK and T route utilising LARK HTLS conductor on a 132kV wood pole construction. This will provide a pre-fault summer continuous rating of 227MVA. The existing AK and T route 132kV steel tower circuit will be dismantled.

Programme	Completion: - Sept 2028
Progress	Design: • SCA Signed off.
	Consenting:
	S37 Application Underway.
	Detailed Engineering:
	Still to be commenced
	Tendering:Still to be commenced
	Construction:
	Still to be commenced
	Commissioning/Close Out:
	Still to be commenced



<u>V2.4</u>	SPT-RI-229 - Moffat SGT3	
OVERVIEW OF WORKS A new 400/132kV 360MVA transformer, and associated 400kV and 132kV circuit breaker bays, shall be installed at Moffat 400/132kV substation to increase the available generation capacity at the 132kV substation.		
Programme	Completion: - August 2025	
Progress	Design: • Design complete. Consenting: • Not Applicable Detailed Engineering: • Complete Tendering: • Complete Construction: • Ongoing Commissioning/Close Out: • Still to be commenced Link to related info: • Complete	



<u>V2.1</u>	SPT-RI-230- Gretna to Faw Side WF Tee 132kV	
OVERVIEW OF WORKS It is proposed to re-profile approximately 36km of the 132kV overhead line Gretna to Hawick circuit (AL and V Route), between Gretna and the proposed Faw Side Community Wind Farm 'T' connection. It is proposed to re-profile the Poplar conductor to operate from 75°C to 90 °C. NGET own a section of AL and V Route on this circuit and will have to reinforce to match the SPT proposals.		
Programme	Completion: - October 2025	
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC	



EHRE	<u>SPT-RI-231 - Replace the conductors on the existing circuit between</u> <u>Elvanfoot and Harker with higher capacity conductors</u>	
OVERVIEW OF WORKS In order to maintain the 4.4MW North-South boundary transfer over Boundary B6, due to the level of generation connecting on to this interconnector, it is necessary to thermally uprate the Elvanfoot – Harker 400kV double circuit, via reconductoring with twin Curlew HTLS conductor, operating at 190°C.		
Programme	Completion: - 2030	
Progress	 Current stage(s): Design and development, Consenting, Ofgem project assessment, Procurement Next stage: Procurement start dat Link to related info: 	



<u>V1.5</u>	SPT-RI-232 - Hopsrig Substation Transformer 132/33kV	
	OVERVIEW OF WORKS MVA transformer will be installed at Hopsrig collector substation. This will create a new v new generators to connect.	
Programme	Completion: - Under Review	
Progress	 Design: Some design packages are completed with the rest on hold awaiting customer signing of mod-apps with regards to change of connection dates Consenting: Complete Detailed Engineering: Some design packages are completed with the rest on hold awaiting customer signing of mod-apps with regards to change of connection dates Tendering: Still to be commenced Commissioning/Close Out: Still to be commenced Link to related info: 	



	SPT-RI-233 - Gretna to Jun V 132kV Circuit Reinforcement (AL
<u>V2.2</u>	<u>Route)</u>
	OVERVIEW OF WORKS
It is proposed to re-p	rofile AL Route single circuit Gretna to Junction V 132kV overhead line, in order to

It is proposed to re-profile AL Route single circuit Gretna to Junction V 132kV overhead line, in order to increase the thermal rating to a minimum summer pre-fault continuous rating of 124MVA. The current circuit is a 132kV overhead tower line, with Lynx conductor, with a pre-fault summer continuous rating of 89MVA. This project is in response to the increased level of generation in the area.

The 132kV overhead line circuit between Gretna and Junction V has split ownership, 5 km from Gretna 132kV substation following AL route, to tower AL57. This is owned by SPT with the remaining section from tower AL57 to AL68 at Junction V owned by NGET. Any uprating by SPT will need to be matched by NGET. The project will be to reconductor the SPT-owned 5km of AL route utilising Poplar conductor on the existing steel tower construction. This will provide a pre-fault summer continuous rating of 124MVA.

Programme	Completion: - Under review
Progress	Design:Early design in progress
	Consenting: • N/A
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out:Still to be commenced



<u>V2.3</u>	SPT-RI-236- Glenmuckloch to ZV Route Reinforcements	
OVERVIEW OF WORKS The contracted generation in South West Scotland in the area of Glenglass and Blackhill has reached a level where new reinforcements will be required to provide any new offers, or alleviate the restricted availability access to existing offer (Glenmuckloch pumped storage). The 132kV network between Glenglass and New Cumnock is utilised beyond its thermal capability and the wider network from New Cumnock to Coylton and to Kilmarnock South (WA and XY routes) is significantly constrained.		
Programme	Completion: - October 2027 – Under Review	
Progress	 Design: Route design ongoing – corridors still being explored Consenting: Following route design and screening Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced 	



<u>V2.1</u>

SPT-RI-237- Enoch Hill Collector 132/33 kV substation and associated 132 kV circuit

OVERVIEW OF WORKS

A 132/33kV substation will be established, adjacent to Enoch Hill wind farm, in East Ayrshire (255265E, 609695N). A new 132kV underground cable circuit will connect this new substation into a new 132 kV bay in Board C, New Cumnock 132kV substation.

This TORI describes the works required for the installation of Enoch Hill Collector 132/33 kV Substation and its associated 132 kV circuit.

The 132 kV circuit comprises of approximately 4.4km of underground cable (as oppose to OHL), which has been requested by Enoch Hill Windfarm.

Programme	Completion: - May 2025
Progress	Design:Early design complete.
	Consenting:Wayleaves in place. Planning approved.
	Detailed Engineering: • Complete
	Tendering: • Complete
	Construction: • Ongoing
	Commissioning/Close Out: • Still to commence



<u>V2.1</u>	SPT-RI-246 - Denny SGT2	
OVERVIEW OF WORKS At Denny North substation, a new 1000MVA 400/275kV supergrid transformer and associated circuit breakers will be installed. This will increase the thermal capacity of Denny North 400kV substation, and across the B4 Boundary, to facilitate the connection of generation in the SHE Transmission area.		
Programme	Completion: - Under review	
Progress	 Design: Ongoing Consenting: Not applicable, all works within Denny 400 / 275kV Substation. Detailed Engineering: Detailed engineering commenced. Tendering: Commenced for 1000MVA Transformer. Construction: Still to commence Commissioning/Close Out: Still to commence 	



<u>V1.2</u>	SPT-RI-251 - Coalburn to Douglas North Collector Substation 132kV
	Cable Reinforcement
	OVERVIEW OF WORKS
wind farm 132kV sub location approximate 144MVA to 165MVA It is proposed to inst	800mm2 AL XLPE 132kV cable between Coalburn 132kV substation and Middlemuir ostation. Douglas North 132kV Collector substation will be connected into this cable at a ely 5km from Coalburn. A reinforcement has been identified to uprate this cable from by removing two thermal pinchpoints. These works are identified under SPT-RI-268. all a second 132kV underground cable circuit (~5km) between Coalburn and Douglas or substation. This cable should match the thermal rating of the adajacent cable
Programme	Completion: - Under Review
Progress	Design: • TBC
	Consenting: • TBC
	Detailed Engineering:
	• TBC
	Tendering:
	• TBC
	Construction:
	• TBC
	Commissioning/Close Out:
	• TBC



<u>V2.0</u>

SPT-RI-261 - Cupar - Leven 132 kV Circuits LMS

OVERVIEW OF WORKS

A Load Management Scheme (LMS) is required to monitor circuit loadings at:

- Westfield 132 kV substation in order to monitor for overload conditions on the Westfield-Cupar-Leven 132 kV circuit
- Redhouse 132 kV substation in order to monitor for overload conditions on the Redhouse-Cupar-Leven 132 kV circuit
- IED to be installed a Cupar GSP to act an LMS outstation to complete the communications channel.

Programme	Completion: - Complete
Progress	Design: • Complete
	Consenting: • Complete
	Detailed Engineering: • Complete
	Tendering: • Complete
	Construction: • Complete
	Commissioning/Close Out: • Complete



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SPT-RI-263 - Coalburn SGT4

OVERVIEW OF WORKS

At Coalburn 400/132kV substation, works are required to extend the compound to facilitate the extension of the 400kV and 132kV double busbars and installation of a fourth 360MVA supergrid transformer as SGT1 with the existing 240MVA unit moving to the new substation extension as SGT4. In addition, alterations will be made to the 400kV busbars to provide a Main and Reserve busbar, and the 132kV busbars to form two separate switchboards ("A" and "B" board). Modifications will be made to the existing load management scheme on SGT1, SGT2 and SGT3 to monitor only SGT1 and SGT2 whilst an additional scheme will be installed to monitor SGT3 and SGT4.

The diverting of 2 No.132kV cable circuits into Coalburn has been allowed for to ensure that the generation is split appropriately across the "A" and "B" 132kV switchboards.

These works will provide additional capacity at Coalburn for generation connecting to the associated transmission and distribution network.

Programme	Completion: - Under review
Progress	Design: • Design work complete. Consenting: • Planning Permission in place and land purchase complete. Tendering: • Complete bar final landscaping contract (planning condition). Construction: • Bay swap and cable diversion works complete. • Platform works completed, with civils works in the extension completed also. • Civil works in the existing substation complete • Transformer move works complete (SGT4) • Installation and cold commissioning of new SGT1 complete. Commissioning/Close Out: • Works ongoing for the 132kV board split



V2.6

SPT-RI-274 - Glenshimmeroch Collector Substation

OVERVIEW OF WORKS

OVERVIEW OF WORKS

On the New Cumnock / Blackcraig 132kV circuit, establishment of a new collector substation named 'Glenshimmeroch collector substation'. At Glenshimmeroch collector substation, install of a 132kV circuit breaker and associated disconnectors, a 132kV busbar and a 132kV disconnector (on the Blackcraig 132kV circuit). It is also proposed to install an-auto-isolation scheme at Glenshimmeroch collector substation in order to isolate the faulted circuit and re-energise the remaining circuit(s).

Programme	Completion: - October 2027
Progress	Design: • In progress
	Consenting: • In progress
	Detailed Engineering:Still to commence.
	Tendering:Still to commence.
	Construction: Still to commence.
	Commissioning/Close Out: Still to commence.



<u>V2.3</u>	SPT-RI-275 - Mark Hill 132kV Bus		
OVERVIEW OF WORKS To increase the utilisation of the available capacity at Mark Hill substation it is proposed to create a new 132kV Board by coupling supergrid transformers SGT2 and SGT3. To achieve this it is proposed to install a 132kV bus section breaker to share the available capacity on both transformers.			
Programme	Completion: - January 2027		
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC		



<u>V2.3</u>	SPT-RI-282 - Markhill SGT4		
TORI 282 is develop farms. Network analy	OVERVIEW OF WORKS e connection of the Knockodhar and Clauchrie Windfarm a fourth transformer is required, ed to include the works at Mark Hill substation to enable the connection of the wind /sis has identified the need to install a 132kV circuit breaker between the Markhill 'B' and /kV switchboards to support the mitigation of harmonic issues across the Mark Hill 132kV		
Programme	Completion: - August 2027		
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC		



V	.5

<u>SPT-RI-284 - GEMS</u>

OVERVIEW OF WORKS

The Generation Export Management Scheme (GEMS) is a Transmission System to Generating Unit Operational Intertripping System (OTS) that will protect the SP Transmission network in southwest Scotland against unacceptable overloads on transmission equipment. The GEMS system will trip directly connected and embedded generation, as required, to avoid the unacceptable overloading of transmission equipment at Kilmarnock South 400/275kV Substation. Generator(s) to be tripped will be determined by NGESO.

The OTS will ensure for the planned or unplanned unavailability of two out of the three 400/275kV 1000MVA Supergrid Transformers (SGTs) at Kilmarnock South, the remaining SGT is not overloaded. Conditions that could cause this include:

- A Planned or Unplanned Outage on one Kilmarnock South SGT followed by a Fault Outage on another Kilmarnock South SGT;
- An Unplanned or Fault Outage on: Kilmarnock South 400kV circuit breaker X120; 275kV circuit breaker S10; or, 275kV circuit breaker W90.

Note that a Kilmarnock South SGT could trip due to a Fault Outage on other equipment which forms part of the same circuit e.g. a fault on the Kilmarnock South - Hunterston No.1 overhead line will cause Kilmarnock South SGT1 to trip.

Note also that the condition where Kilmarnock South SGT6 is on Planned or Unplanned Outage, followed by a fault on Kilmarnock South 400kV circuit breaker X120, which will trip both Kilmarnock South SGT1 and SGT2, will be capable of being detected by the Ayrshire Operation Intertrip Scheme (AOIS). The AOIS will in turn open specified circuit breakers to minimise the loss of supplies in southwest Scotland.

Programme	 Completion: Stage 1 – February 2025 - Complete Stage 2 – August 2025
Progress	 Design: Complete Consenting: Not applicable. Detailed Engineering: Complete for Stage 1, Ongoing for Stage 2 Tendering: Complete Construction: Complete for Stage 1, Ongoing for Stage 2 Complete for Stage 1, Ongoing for Stage 2 Commissioning/Close Out: Complete for Stage 1, Still to commence for Stage 2



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<u>V2.0</u>
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SPT-RI-288 - Hawick – Galashiels 132kV Reconfiguration

OVERVIEW OF WORKS

Hawick 132/33kV substation is currently supplied via two 132kV circuits from Gretna 400/132kV substation, with a 132kV circuit to Galashiels normally open at CB 205. With the proposed connection of Faw Side wind farm (250MW) it is proposed to reconfigure Hawick 132kV substation such that Hawick can be supplied from Galashiels and establish the Hawick / Galashiels 132kV circuit No.1 and No.2. Works at Galashiels will be required to terminate the double circuit from Hawick post reconfiguration.

At Hawick, it is also proposed to install two new 132kV circuit breakers and a fourth 132kV circuit at Hawick with Poplar conductor:

Amps	MVA	Amps	Ν	1VA	Amps	MVA
Pre-Fault Continuous	615	140	590	134	540	124
Post-Fault Continuous	730	167	700	160	645	147

The existing circuit breakers at Galashiels are of 600A and 800A. It is also proposed to replace the 600A circuit breakers 120 and 620 with a standard 2000A circuit breaker.

Progress Design:	
 Still to be commenced Consenting: Still to be commenced Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced 	



<u>V2.5</u>	SPT-RI-289 - Glenmuckloch Overload Protection Scheme
	OVERVIEW OF WORKS
o utilise the non-firn	n capacity between Glenmuckloch and Glenglass a Load Management Scheme (LI

To utilise the non-firm capacity between Glenmuckloch and Glenglass a Load Management Scheme (LMS) is required. This scheme will perform the following:

- 1. Monitor the loading on the 132kV circuits between Glenglass and Glenmuckloch.
- 2. Interface with the LMS at New Cumnock and Glenglass to receive information regarding overloads on other parts of the 132kV network and New Cumnock Transformers.
- 3. Interface with local tripping scheme to disconnect generators connected at Glenmuckloch substation.

Programme	Completion: - June 2027 – Under Review
Progress	Design: Initial design underway
	Consenting:
	Not Applicable
	Detailed Engineering: Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V2.3</u>	SPT-RI-292 - Lorg to Shepherds Rig tee			
rating 176MVA) betw	OVERVIEW OF WORKS kV wood pole overhead line with UPAS conductor (75°C, minimum summer pre-fault veen Lorg 132kV substation and the proposed Shepherds Rig tee connection. This will to Holmhill 132kV overhead line.			
Programme	Completion: - November 2027			
Progress	 Design: Early design in progress. OHL route design in progress. Consenting: S37 under final review before being issued to the ECU Q2 2025. Detailed Engineering: Commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced 			



<u>V2.4</u>	SPT-RI-293 - Carrick 275kV substation		
25km northeast of M circuit breaker on ea	OVERVIEW OF WORKS tion will be installed on the Coylton-Mark Hill 275kV circuit (YY route) approximately ark Hill substation. The YY route will be turned in to the new substation with a 275kV ch circuit. The new circuit breakers will maintain the single-phase high-speed auto ich currently exists on the YY route.		
Programme	Completion: - Under Review		
Progress	Design: In progress Consenting: Still to be commenced Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced		



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<u>V2.2</u>
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SPT-RI-294 - Ewe Hill to Hopsrig collector substations 132kV circuit

OVERVIEW OF WORKS

An optimised solution has been identified to connect Hopsrig, Loganhead, Hareshaw Rig and Dealanach wind farms. This optimised solution will establish a new 132kV collector substation at Hopsrig wind farm where Hopsrig wind farm will be connected (via a 33kV PoC). At the Hopsrig collector substation, an individual PoC at 33kV will also be provided for Loganhead, Hareshaw Rig and Dealanach wind farms.

To provide connectivity between the existing Ewe Hill collector substation and the Hopsrig collector substation, it is proposed to install a new 132kV overhead line circuit between Ewe Hill and Hopsrig collector substations. The circuit will utilise Poplar conductor operating at 90°C.

Programme	Completion: - Under Review
Progress	 Design: Some design packages are completed with the rest on hold awaiting customer signing of mod-apps with regards to change of connection dates
	Consenting: • Complete
	 Detailed Engineering: Some design packages are completed with the rest on hold awaiting customer signing of mod-apps with regards to change of connection dates
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.1</u>	SPT-RI-295- Newton Stewart GSP GT1(2) OLP & LMS Outstation			
OVERVIEW OF WORKS An overload protection (OLP) scheme is required at Newton Stewart 132/33 kV substation in order to prevent overload conditions on the single transformer when the other transformer is out of service. The overload will be removed by the OLP scheme tripping the appropriate non-firm connections.				
Programme	Completion: - March 2026			
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC			



<u>V2.5</u>	SPT-RI-296 - Margree collector substation 132kV overhead line uprating			
OVERVIEW OF WORKS Due to an increase in the generation contracted in the area, it is proposed to uprate a section of the overhead line and cable between the proposed Margree collector substation to tee point on the New Cumnock – Kendoon 132kV circuit. This is approximately 12km overall. This will be achieved by replacing the existing UPAS conductor with an EAGLE conductor on the existing wood pole system. The underground cable is also to be replaced to, as a minimum, match the OHL system.				
Programme	Completion: - October 2029			
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC Link to related info:			



<u>V1.0</u>	SPT-RI-298- Chapelcross to Gretna 132kV OHL Reinforcement			
OVERVIEW OF WORKS The Gretna to Chapelcross No.1 and No.2 132kV circuits require to be reinforced as the thermal capacity of the existing ACSR "Lynx" circuits are exceeded during times where the Chapelcross to Harker 132kV circuit is out of service or a Gretna to Chapelcross circuit is out of service.				
Programme	Completion: - October 2027			
Programme Completion: - October 2027 Progress Design: TBC Consenting: TBC Detailed Engineering: TBC Tendering: TBC Construction: TBC Commissioning/Close Out: TBC 				



<u>V2.1</u>	SPT-RI-301- Mark Hill to Arecleoch Ext Tee 132kV Circuit
	OVERVIEW OF WORKS

At Mark Hill 132kV substation a 132kV switch bay will be installed. From this a 132kV circuit, consisting of 0.5 km of underground cable and ~7.5km of 132kV overhead line (HTLS 'Eagle' conductor), will be installed to the tee point with Arecleoch Extension wind farm. The HTLS 'Eagle' ACCR conductor has the following circuit ratings:

Winter		Autum	n		Summ	er
Amps	MVA	Amps	M	VA	Amps	MVA
Pre-Fault Continuous	1340	305	1320	300	1290	295
Post-Fault Continuous	1600	365	1570	360	1530	350
The underground cable will be sized to match the ratings of the overhead line.						

Programme	Completion: - October 2026		
Progress	 Design: OHL Overview design complete and approved as part of S37 consent. Underground cable tender design complete and pending issue. Consenting: S37 approved and all construction start pre-conditions now discharged also. Cable progressing via permitted development regs. Detailed Engineering: In progress with appointed OHL contractor Cable tender pending issue. Tendering: OHL contract awarded. Tree-felling contract awarded. No further contracts expected to be required (for OHL works). Cable tender pending issue. Construction: Expect tree felling works to commence in May-25 OHL CDM site set-up and material preparation works in progress. Expect pole construction works to commence from May-25. Cable installation works forecast to commence Q2 2026 at present. Commissioning/Close Out: Still to commence. 		



<u>V1.0</u>	SPT-RI-302 - Glenglass 132kV substation		
OVERVIEW OF WORKS To enable the connection of generation in the Glenglass area and extend the 132kV network to Glenmuckloch a new 132kV substation is required in Glenglass. The new substation will be a double busbar 132kV GIS substation with a bus coupler and sized for eight feeder circuits. Also to maximise the network capabilities the 132kV circuits between Glenglass and Blackhill are limited by cables at Blackhill substation. These cables will need to be uprated to match the 132kV Blackhill to Glenglass OHL ratings.			
Programme	Completion: - April 2024		
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC		



<u>V1.1</u>	SPT-RI-306- Moffat 132kV Fault Level Mitigation Bus Section Circuit Breaker			
OVERVIEW OF WORKS At Moffat 132kV substation it is required to extend the existing compound to accommodate the connection of further generation into the site. The compound shall be extended with the existing 132kV busbars being extended into this area. The installation of a new 132kV bus section circuit breaker will be required in order to alleviate exceeding the fault level design limits at the site.				
Programme	Completion: - August 2025			
Progress Design: • In progress Consenting: • Complete Detailed Engineering: • Complete Tendering: • Complete Construction: • Ongoing Commissioning/Close Out:				



<u>V2.5</u>	SPT-RI-1507 - Holmhill 132kV Substation			
OVERVIEW OF WORKS The TORI works entail a cable run from Tower DE68 on the New Cumnock to Glenlee circuit side (note this circuit is currently the New Cumnock to Kendoon circuit however post KTR project completion will be the New Cumnock to Glenlee circuit) to the new proposed Holmhill 132kV substation and then establishing the 132kV substation for the two circuits from Lorg and Quntans Hill to connect.				
Programme	Completion: - November 2027			
Programme Completion: - November 2027 Progress Design: Early design in progress Consenting: Under review Detailed Engineering: Commenced Tendering: Still to be commenced Construction: Still to be commenced Still to be commenced Still to be commenced Still to be commenced Still to be commenced 				



V	2	.1	

SPT-RI-1551 – Spango Valley GSP Protection Modifications

OVERVIEW OF WORKS

SPANGO VALLEY GSP GT1(2) OLP SCHEME AND LMS OUTSTATION

The directional overcurrent relay on Spango Valley GT1 and GT2 will inhibit reverse power flow over 46MVA. Therefore if one transformer is out of service, the other would trip out for reverse power flow over 46MVA. Embedded generation at Spango Valley has reached 49.9MW so action is needed to avoid the transformers tripping.

The LVDOC relay protecting GT1 and GT2 at Spango Valley will need to be modified or replaced to allow for reverse power flow. The modification is required to allow full reverse power flow. Works will include removal of the directional element and adding in an additional intertrip.

Programme	Completion: - No Longer Requied
Progress	Design: • N/A
	Consenting: • N/A
	Detailed Engineering: • N/A
	Tendering: • N/A
	Construction: • N/A
	Commissioning/Close Out: • N/A



DDUD	SPT-RI-1560 – Upgrade the existing network to a higher voltage
BDUP	between Beauly and Denny
Upgrade the existing	network to a higher voltage between Beauly and Denny
Dreaman	Completions 2020
Programme	Completion: - 2029
Progress	Current stage(s):
	 Design and development, Consenting, Ofgem project assessment,
	Procurement
	Nové stavo
	Next stage:
	Optioneering end date/ design and development start date



<u>V2.2</u>	<u>SPT-RI-1566 – Hunterston East to Ayrshire Grid 400kV switchgear</u> and cable works
OVERVIEW OF WORKS To facilitate new connections around Hunterston East 400kV GIS substation, it is proposed to extend the GIS double busbar and install one new 400kV switchbay and associated equipment, install approximately 900m of 400kV underground cable from the Hunterston East 400kV GIS substation to a new SPT collector substation (Ayrshire Grid 400kV collector substation). At the collector substation, a new outdoor 400kV busbar and four 400kV isolators shall be installed.	
Programme	Completion: - August 2025
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC



<u>V1.2</u>	SPT-RI-1576 - Cupar GSP GT1(2) OLP Scheme and LMS Outstation
OVERVIEW OF WORKS An overload protection (OLP) scheme is required at Cupar 132/33 kV substation in order to prevent overload conditions on the single transformer when the other transformer is out of service. The overload will be removed by the OLP scheme tripping the appropriate non-firm connections.	
	e measurement is required for each transformer so the direction, as well as magnitude, of gh the transformer can be determined.
Programme	Completion: - Complete
Progress	Design: • Complete Consenting: • Complete Detailed Engineering: • Complete Tendering: • Complete Construction: • Complete Commissioning/Close Out: • Complete



<u>V2.3</u>	SPT-RI-1577 - Cupar GSP LV Protection Modifications
OVERVIEW OF WORKS In order to remain within SPEN policy (PROT-01-107), the existing Alstom/Areva K-series LVDOC relays on the T1 and T2 and Cupar 132/33kV GSP are required to be replaced with a second intertrip such that reverse power flow is only limited by the rating of the transformer (including emergency ratings). The modification is required to allow full reverse power flow.	
Programme	Completion: - Complete
Progress	Design: • Complete Consenting: • Complete Detailed Engineering: • Complete Tendering: • Complete Construction: • Complete Complete Complete



CDT DI 4050 Detherate te Dennykridge 420kV No.4 and No.2 Coble	
<u>V2.1</u>	SPT-RI-1659 - Bathgate to Bonnybridge 132kV No.1 and No.2 Cable
	Uprating
	OVERVIEW OF WORKS
The connected and contracted generation at Bathgate and Drumcross GSP have reached the level that will exceed the intact capacity of the existing 132kV cable between Bathgate / Drumcross to Bonnybridge. It is proposed to uprate these existing cable section at Bonnybridge end on both No.1 and No.2 circuits to provide a higher rating to remove the overload under an intact system.	
Programme	Completion: - September 2026
Progress	Design:
	In progress
	Consenting:
	Not applicable
	Detailed Engine grings
	Detailed Engineering: Still to be commenced
	Tendering:
	Still to be commenced
	Construction:
	Still to be commenced
	Commissioning/Class Out
	Commissioning/Close Out:
	Still to be commenced



CMN3

<u>SPT-RI-1738, SPT-RI-1795, SPT-RI-2378, SPT-RI-2417, SPT-RI-2418,</u> <u>SPT-RI-3829 – South East Scotland to North West England Onshore</u> *Reinforcement*

OVERVIEW OF WORKS

1738: - This TORI shall construct a new 400kV double circuit OHL using L13 towers and triple Araucaria conductor from Teviot 400kV substation to the SPT/NGET border which is approximately 43km. NGET shall then complete the circuit from the border to Harker 400kV substation. The SPT scope includes two new 400kV GIS bays at Teviot 400kV substation.

1795: - To facilitate additional power flow over the B6 boundary between Scotland and England, given the growing level of renewable generation connecting in Scotland, this project will construct a new 400kV double circuit over the boundary from the South East of Scotland and the North West of England. Further development of the circuit landing points will be assessed, but for study and costing purposed, the existing substations Eccles in the SPT area and Harker in the NGET area has been assumed. The new towers will be of L12 construction, conductored with twin Araucaria

2378: - This TORI shall construct a new 400/132kV substation to facilitate the new 400kV OHL connections into the site as well as install two new 400/132kV 360MVA transformers and a 132kV double busbar substation for the Teviot windfarm connection. For the 400kV substation to be constructed under this TORI it is proposed to install a Gas Insulated Switchgear (GIS) rated at 5000A.

2417: - This TORI shall construct a new 400kV double circuit OHL using L13 towers and triple Araucaria conductor from Teviot 400kV substation to Gala North 400kV substation which is approximately 57km. The SPT scope includes two new 400kV GIS bays to be installed at both Teviot 400kV substation and Gala North 400kV substation. Gala North 400kV substation itself shall be created under SPT-RI-2079.

2418: - Under this TORI it is proposed to establish a second 132kV board at Teviot substation. This will require the installation of three 400kV GIS bays as well as three 400/132kV 360MVA transformers and their associated 132kV double busbar bays as well as a 132kV bus coupler and a bus section. All 132kV switchgear is proposed to be Air Insulated Switchgear (AIS). Furthermore, a Load Management Scheme (LMS) shall be installed to monitor the loading on the SGTs across the Teviot 'B' board.

3829: - The scope of SPT-RI-3829 will be to establish the new 400/132kV substation. It is proposed to construct the 400kV infrastructure using Gas Insulated Switchgear (GIS) equipment given the number of bays looking to installed and be rated at 5000A. It is proposed to construct the 132kV infrastructure using Gas Insulated Switchgear (GIS) equipment given the number of bays looking to installed. The substation will be interconnected with Gala North 400/132kV, Teviot 400/132kV and Harker 400kV substations through SPT-RI-1738 & SPT-RI-2417.

Programme	Completion: - 2034
Progress	 Current Stage(s): Preferred OHL Route & Preferred S/S Assessment completed and proposed OHL Route & Preferred S/S to be confirmed Apr 2025.
	 Next stage: Optioneering end date/ design and development start date.



<u>V2.2</u>	SPT-RI-1741 - Neilston Supergrid Transformers Auto Changeover
	<u>Scheme</u>
	OVERVIEW OF WORKS scheme is required at Neilston substation to allow the connection of synchronous
compensators at Neilston 400kV. The scheme is needed for the management of fault level at Neilston 132kV substation. It is proposed that one of the three supergrids (SGT1, SGT2 or SGT3B) that serve Neilston 132kV substation to be on open standby to reduce the fault infeed to the 132kV substation and for an unplanned outage on another SGT, the one on open standby will need to be returned to service.	
Programme	Completion: - August 2024
Progress	Design:
	Complete
	Consenting:
	• N/A
	Detailed Engineering:
	Complete
	Tendering:
	Complete
Construction:	
	Complete
Commissioning/Close Out:	
	Under way



<u>V1.0</u>	SPT-RI-1742 - Cockenzie Load Management Scheme (Cat 2)
OVERVIEW OF WORKS An overload protection scheme is proposed to be installed within the Cockenzie – Smeaton – Kaimes – Eccles 275kV and 400kV network in order to protect the system in compliant with Category 2 Intertripping Scheme as defined by the Grid Code. The intertripping scheme will disconnect the generation within the area following system outage conditions as defined in Section 2.1.	
Programme	Completion: - Under Review
Progress	 Design: SCA drafted. Design under review Consenting: N/A Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



V2.6	<u>SPT-RI-1745 - Kincardine to Fife Grid 275kV switchgear and cable</u> works
OVERVIEW OF WORKS To facilitate the connection of contracted generation from SPT's Fife Grid Services Facilities 275kV substation to Kincardine 275kV substation, it is proposed to install a new 275kV busbar, associated metering circuit breakers and disconnectors with approximately 0.9km of 275kV underground cable circuit to Kincardine (KINC) 275kV substation. At Kincardine (KINC) 275kV substation, a new 275kV GIS bay will be installed, associated disconnectors and one 275kV line isolator.	
Programme	Completion: - Under review
Progress	 Design: Design ongoing. Intrusive surveys for cable route planned to start June 2024 now 275kV cable corridor has been established. Consenting: S36 granted to Developer/s SPEN lease agreement consultation ongoing with landowner for collector substation site. Necessary Wayleave (NWL) process underway for 275kV cable route. Voluntary route agreement unsuccessful. NWL expected to be established Q4 2024. Detailed Engineering: Commenced and ongoing. Tendering: GIS contract awarded. Civils tendering commenced and ongoing. Construction: Still to be commenced.



<u>V1.1</u>	SPT-RI-1791 - Cockenzie to Eccles 400kV (ZA route)
	OVERVIEW OF WORKS prate the 400kV double circuit between Cockenzie 400kV substation and Eccles 400kV win Totara to triple Totara operating at 90°C.
Programme	Completion: - October 2032
Progress	 Design: Still to be commenced
	Consenting:Still to be commenced
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	 Commissioning/Close Out: Still to be commenced



<u>V2.4</u>	SPT-RI-1796 - Cousland 400kV GIS substation
Cockenzie in the Coc circuit (ZS route) and routes will be turned Instruction as 'Coust	OVERVIEW OF WORKS a busbar substation, utilising Gas Insulated Switchgear (GIS), will be established south of usland area in the vicinity of the Torness/Fallago to Smeaton/Wishaw 400kV double d Cockenzie to Eccles 400kV double circuit (ZA Route) crossing. Both the ZA and the ZS into the new substation. The substation known for the purposes of this TO Reinforcement and 400kV Substation', and associated plant and apparatus, will provide a node for the re and offshore developments in the east Lothian area.
Programme	Completion: - October 2033
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



VERE	<u>SPT-RI-1797 – Replace the conductors on the existing circuit</u> between Strathaven and Elvanfoot with higher capacity conductors
OVERVIEW OF WORKS Due to the increased level of generation connecting on to ZV Route it is necessary to thermally uprate the Strathaven to Elvanfoot 400kV OHL circuits (STHA-COAL, COAL-REDS, REDS-ELVA and STHA-REDS, REDS-ELVA). It is proposed to reconductor the double circuit with twin ACCR "Curlew HTLS" conductor operating at 190°C.	
Programme	Completion: - 2030
Progress	 Current stage(s): Design and development, Consenting, Ofgem project assessment, Procurement Next stage: Procurement start date



<u>V2.1</u>	SPT-RI-1851 - Benbrack 132kV overhead line and substation works
OVERVIEW OF WORKS A new collector substation will be established at Benbrack wind farm with a 132/33kV 120MVA transformer. An overhead line (Poplar 124MVA) will tee into the New Cumnock – Blackcraig – Glenlee 132kV circuit.	
Programme	Completion: - April 2025
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC



WCD4SPT-RI-1854, 3176, 3177 & 3178 – Increase the capacity of the
proposed HND1 West Coast offshore HVDC link between Scotland
and Wales

OVERVIEW OF WORKS

1854: - At Kilmarnock South 400kV GIS substation install a bus coupler to run the substation in double busbar arrangements.

3176: - Install a 2GW HVDC link from Kilmarnock South 400kV substation to the South Ayrshire 525kV HVDC bussing station located in southwest Scotland. The DC bussing station to facilitate a multi terminal HVDC arrangement between Kilmarnock South, Machair Wind and a southern converter station located in NGET.

3177: - At Kilmarnock South extend the existing 400kV GIS substation to accommodate additional feeders to connect SGT1, SGT2, HUER 1 and STHA 1 circuits.

3187: - Install a 4GW HVDC link from the South Ayrshire 525kV HVDC bussing station to a southern converter station within the NGET licensed area. The costs associated with this SPT reinforcement instruction are associated with the installation of the HVDC cable system from the DC bussing station to the Scotland-England maritime boundary.

Programme	Completion: - 2037
Progress	Current stage(s): Scoping Next stage: Scoping end date/ optioneering start date



V1.0

SPT-RI-1870 - Lesmahagow GSP Overload Protection Scheme

OVERVIEW OF WORKS

Installation of an overload protection scheme to be installed at Lesmahagow 132/33kV substation to monitor GT1 and GT2. In the event that either unit is out of service and the remaining in-service unit is reaching its thermal capacity a trip signal should be sent to the User to remove Little Gala WF. The scheme will operate with the following principles:

- Stage 1 95% of transformer rating
- Stage 2 100% of transformer rating
- Stage 3 120% of transformer rating

The different stages have the following intended actions:

- Stage 1 signal: Provides an alarm to the connection warning of impending overload condition
- Stage 2 signal: Will trip connections associated with the scheme as per queue order (above)
- Stage 3 signal: Will trip all connections regardless of queue order.

Programme	Completion: - Shown as terminated on previous submission
Progress	Design: • Terminated
	Consenting: • Terminated
	Detailed Engineering: • Terminated
	Tendering: • Terminated
	Construction: Terminated
	Commissioning/Close Out: • Terminated



TGDC	SPT-RI-1873 – New offshore HVDC link between East Scotland and
	the East of England (Eastern Green Link 4)
	OVERVIEW OF WORKS
	V HVDC subsea link between the East Lothian area in South East Scotland, and the in North East England. Complete associated AC onshore reinforcement works at both
Programme	Completion: - 2034
Progress	Current stage(s): Design and development Next stage: Consent Application Date



<u>V2.2</u>	SPT-RI-1876- Elvanfoot 132/33kV Grid Transformer
Install a 132/33kV 60 33kV into the site.	OVERVIEW OF WORKS DMVA transformer at Elvanfoot to accommodate the increased generation connecting at
Programme	Completion: - August 2025
Progress	 Design: Early design complete. Consenting: Planning Application approved and majority of conditions discharged. Detailed Engineering: Commenced and ongoing. Tendering: Transformer order placed. Main contracts awarded. Construction: Commenced and ongoing. Commenced and ongoing. Commenced and ongoing.



<u>V1.0</u>	SPT-RI-1879 - Cousland 400kV GIS substation
between YJ010 and	OVERVIEW OF WORKS I be established on the Longannet – Mosmorran 275kV circuit (YJ Route) approximately YJ011. The YJ route (south circuit) will be turned in to the new substation with a 275kV ch side which will be connected to a new 275kV busbar.
Programme	Completion: - October 2027
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



V1.0	SPT-RI-1880 - Longannet to Westfield / Mosmorran 275kV circuit
	<u>uprate</u>
	OVERVIEW OF WORKS
reconductoring to ac	ate the existing Longannet – Westfield – Mosmorran circuits (both north and south) by commodate the generation in the area. s shall be reconductored:
	m of the overhead line (on both sides of the towers) between YJ001 to YJ075 with twin ated; subject to further verification);
	of the overhead line (on both sides of the towers) between YJ075 to YJ084 with twin ated; subject to further verification);
	n of overhead line (on both sides of the towers) between YV001 to YV015 with twin Totara bject to further verification).
Programme	Completion: - TORI no longer required
Progress	Design: • N/A
	Consenting: N/A
	 Detailed Engineering: N/A
	Tandaring
	• N/A
	Construction:
	N/A
	Commissioning/Close Out: • N/A



<u>V2.0</u>	SPT-RI-1968 - Neilston 275kV Uprating to 40kA
275kV need to increa	OVERVIEW OF WORKS e second Synchronous Compensator at Neilston 400kV the short circuit rating of Neilston ase from current design specification of 31.5kA to 40kA. This will include the assessment necessary of equipment and structures to withstand a fault current of 40kA.
Programme	Completion: - May 2027
Progress	 Design: Design in progress. Consenting: Still to be commenced Detailed Engineering: Still to be commenced Tendering: Tendering underway for Fault Level Surveying Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



<u>V2.4</u>	SPT-RI-2058 - Coalburn North 400kV SS
Strathaven-Elvanfoo	OVERVIEW OF WORKS struct a new 400kV substation, indicatively called Coalburn North, to connect into the t 400kV circuit. It is proposed to construct a new 400kV double busbar substation with a reaker, two feeder bays to connect onto the Strathaven-Elvanfoot 400kV circuit
Programme	Completion: - June 2026
Progress	 Design: Design ongoing. Consenting: Planning application has been submitted. Detailed Engineering: Detailed engineering in progress Tendering: Tendering underway for enabling works Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



<u>V2.0</u>

SPT-RI-2060 - Redshaw 400kV Substation

OVERVIEW OF WORKS

Due to increased generation in the local and wider areas in South Lanarkshire the requirement has been triggered for the creation of a new 400kV substation connecting into ZV Route. This will tie into the Strathaven and Coalburn circuits coming from the north, the two Elvanfoot circuits heading south and the new double circuit coming across from Glenmuckloch under SPT-RI-236.

It is proposed to build a new 400kV GIS substation, building to be sized to accommodate 15 bays. The initial GIS installed to include the following:

- 6x 400kV feeder bays: 2x ELVA, 1x STHA, 1x COAL, 2x Glenmuckloch
- 1x 400kV bus coupler
- 1x 400kV bus section
- 2x 400kV SGT bays (SGT2 not proposed but 400kV GIS bay to be installed as part of the initial build)
- Space to be included within the building to accommodate a future bus section, future SGT3 and SGT4 400kV GIS bays and 2x future 400kV GIS feeder bays
- Installation of a single 400/132kV 360MVA (SGT1) unit at this time

Programme	Completion: - October 2027
Progress	Design:
	GIS platform design and electrical red boundary design is complete.OHL diversion overview design is in progress.
	Consenting:
	Consent process has started and is in Legal for engineering development and contract placement forecasted to be completed in July 2025.
	Detailed Engineering:
	 External design houses are now appointed for the enabling works and electrica works.
	Tendering:
	GIS contract awarded.
	OHL contract tender pending issue.
	Enabling works tender in progress.
	Construction:
	 OHL diversion works forecasted to commence in July 2025.
	• Site Mobilisation and Earthworks forecasted to commence in November 2025.
	Commissioning/Close Out:
	Still to Commence



<u>V2.1</u>

SPT-RI-2061 – Redshaw 132kV Substation

OVERVIEW OF WORKS

It is proposed as part of these works to create a new 132kV substation connecting into the Redshaw 400kV substation to be constructed under SPT-RI-2060. This 132kV substation will establish a collector substation in this area.

SPT shall establish a 10-bay double busbar Gas Insulated Switchgear (GIS) 132kV board at the new Redshaw substation that shall enable the connection of renewable generation projects in this area. The initial GIS installed to include the following:

- 1 x 400kV feeder bay connecting into Redshaw 400kV S/S
- 1 x 400/132kV 360MVA transformer (SGT1)
- 1 x 132kV transformer feeder bay
- 1 x 132kV bus coupler
- 1 x 132kV bus section

Further 132kV bays will be installed under their respective projects albeit the SPT-RI-2061 substation shall be sized appropriately to accommodate these connections.

Programme	Completion: - October 2027
Progress	Design:
	GIS platform design and electrical red boundary design is complete.
	Consenting:
	Consent process has started and is in Legal for engineering development and contract placement forecasted to be completed in July 2025.
	Detailed Engineering:
	 External design houses are now appointed for the enabling works and electrical works.
	Tendering:
	GIS contract awarded.
	Enabling works tender in progress.
	Construction:
	• Site Mobilisation and Earthworks forecasted to commence in November 2025.
	Commissioning/Close Out: Still to Commence



<u>TKUP</u>	<u>SPT-RI-2073 – New circuit from Kintore to Emmock (Tealing) and</u> <u>upgrade elements of the existing Emmock to Westfield and Alyth to</u> <u>Emmock circuits</u>	
	OVERVIEW OF WORKS	
	Establish further 400kV infrastructure on the east coast following the East Coast 400kV onshore incremental (ECUP) reinforcement, Eastern HVDC link from Peterhead (E4DC/D2/D3) and from Torness (E2DC/D2/D3).	
Programme	Completion: - 2030	
Progress	 Current stage(s): Design and development, Consenting, ECF, Ofgem project assessment, Procurement Next stage: Design and development end date 	



<u>V2.3</u>	SPT-RI-2079 - Gala North 400kV Substation
OVERVIEW OF WORKS At an appropriate location around the area between the ZA route and P route, Galashiels North 400kV substation will be established. The substation will be AIS and running in double bus bar arrangement. Achieve connectivity to the 400kV system by turning one side of the ZA route (COCK4-ECCL4 No.2 circuit) to the new substation. The substation should be located and sized to enable future expansion and connectivity to other parts of the system.	
Programme	Completion: - October 2029
Progress	 Design: Design works in progress. Consenting: First public consultation event has been held. On track for planning application. Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



<u>V2.0</u>	SPT-RI-2080 - Gala North 132kV Substation	
	(Previously Dunlaw Extension to Gala Reinforcements)	
	OVERVIEW OF WORKS	
The works in this reinforcement entails the construction of a new 132kV overhead line (OHL) between Dunlaw Extension 132kV substation and Galashiels 132kV substation. The new OHL will be built on L7 steel lattice towers and strung with twin UPAS conductor. The new OHL will be tee-ed to the proposed Galashiels North 400kV substation. At Galashiels North 400kV two 400/132kV 360MVA transformer will be installed to establish connectivity to the new OHL. Two 400kV bay will be added to the 400kV substation to connect the transformers and two 132kV circuit breakers will be installed to connect the transformers to the new OHL.		
This reinforcement w	ill facilitate the decommissioning of the P, U and AT routes.	
Programme	Completion: - October 2029	
Progress	Design:	
	Design works in progress.	
	 Consenting: First public consultation event has been held. On track for S37 application. 	
	Detailed Engineering: Still to be commenced	
	Tendering: Still to be commenced	
	Construction: Still to be commenced	
	Commissioning/Close Out: • Still to be commenced	



DWUP	SPT-RI-2083 – Upgrade the circuit between Kincardine to Wishaw
OVERVIEW OF WORKS Upgrade the circuit between Kincardine to Wishaw, including increasing elements to a higher voltage	
Programme	Completion: - 2029
Progress	 Current stage(s): Design and development, Consenting, Ofgem project assessment, Procurement Next stage: Design and development end date



LCU2	SPT-RI-2084 - Adjust the existing network to form a circuit from Kincardine North towards Strathaven and Smeaton using existing pylon routes	
OVERVIEW OF WORKS The works encompassed in this shared infrastructure scheme is to uprate one side of the existing XD, XN, XK and XM 275kV Route to 400kV operation such to enhance the capability of the B5 boundary. At the same time a larger conductor system will be installed on the remaining 275kV circuit to again		
enhance the capability of the corridor. The 400kV circuit will connect into the new Kincardine North 400kV substation as well as the new Harburn substation under SPT-RI-3002 and will install a new 400/275kV SGT at Currie substation.		
Programme	Completion: - 2030	
Progress	 Current stage(s): Optioneering Next stage: Optioneering end date/ design and development start date Link to related info: 	



DLUP	SPT-RI-2085 – Existing network modification plus new cable cct
OVERVIEW OF WORKS Existing network modification plus new cable cct	
Programme	Completion: - 2029
Progress	Current stage(s): Procurement Next stage: Design and development end date



<u>V1.4</u>	SPT-RI-2094 - Quantans Hill to Holmhill 132kV Circuit
OVERVIEW OF WORKS At the proposed Quantans Hill wind farm site establish a 132kV substation and establish a 132kV busbar to which a 132kV circuit breaker and associated line isolators are connected. Install around 6km of wood pole overhead line (minimum summer rating of 268MVA required) with HTLS conductor to connect Quantans Hill substation to Holmhill substation. It is anticipated that Eagle HTLS conductor shall be required. At Holmhill substation install a 132kV circuit breaker to connect the OHL.	
Programme	Completion: - Under Review
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



LWUP	<u>SPT-RI-2095 – Build a new substation north of Kincardine and</u> connect this to Denny North
	connect this to Deniny North
	OVERVIEW OF WORKS
This TO Reinforceme	ent Instruction sets out SP Transmission's (SPT) plans to establish Kincardine North
	ne purpose of the project is to facilitate increased power transfer into and through the
	newable developments across the north of Scotland and enable the decommissioning of
	ibstation, which is now approaching end of life. These works are programmed to
	O-T2 period (April 2021 – March 2026) and complete in 2027/28, during the RIIO-T3
period.	
Programme	Completion: - 2029
Progress	
	Current stage(s):
	 Design and development, Consenting, Ofgem project assessment,
	Procurement
	Next stage:
	Design and development end date



<u>V1.4</u>	SPT-RI-2132 - Broxburn GSP 132/33kV Grid T1 & T2 (LMS)
OVERVIEW OF WORKS A Load Management Scheme (LMS) is required at Broxburn 132/33kV GSP in order to prevent overload conditions on the single transformer when the other transformer is out of service. The overload will be removed by the LMS tripping the appropriate non-firm connections. There are DNO (SPD) works that are required to be complete in addition to the SP Transmission works noted above.	
Programme	Completion: - September 2024
Progress	Design: • Complete Consenting: • Not Applicable Detailed Engineering: • Complete Tendering: • Complete Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V2.0</u>

<u>SPT-RI-2139 - Redshaw 400/132kV SGT2</u>

OVERVIEW OF WORKS

At Redshaw 400/132kV substation a new 360MVA 400/132kV supergrid transformer and associated 400kV and 132kV circuit breakers will be installed. This will increase the thermal capacity of Redshaw 132kV substation.

A transformer overload protection scheme is also required to manage the loadings across SGT1 and SGT2 at Redshaw 400/132kV substation and trip the appropriate generator to remove any measured overloads. The SPT OLP scheme will be required to transfer the following signals to the User(s):

- Stage 1 Signal at 95% of the transformer rating
- Stage 2 Signal at 100% of the transformer rating
- Stage 3 Signal at 120% of the transformer rating

Note: These values will be subject to change following detailed design, User input and optimisation of the system.

The different stages have the following intended actions

- Stage 1 Signal: Provides an alarm to the connection warning of impending overload condition
- Stage 2 Signal: Will trip connections associated with this TORI as per queue order
- Stage 3 Signal: Will trip all connections regardless of queue order

Programme	Completion: - July 2028
Progress	Design: GIS platform design and electrical red boundary design is complete.
	 Consenting: Consent process has started and is in Legal for engineering development and contract placement forecasted to be completed in July 2025.
	 Detailed Engineering: External design houses are now appointed for the enabling works and electrical works.
	Tendering:GIS contract awarded.Enabling works tender in progress.
	Construction:Site Mobilisation and Earthworks forecasted to commence in November 2025.
	Commissioning/Close Out: Still to Commence



<u>V2.3</u>

SPT-RI-2148 - Windyhill SGT Auto-Close Scheme

OVERVIEW OF WORKS

It is required to install an auto-close scheme across the three 275/132kV supergrid transformers at Windyhill 132kV substation. This is because an SGT will need to sit on open standby to maintain the fault level rating on the switchgear. This auto-close scheme shall close back in the open standby transformer following the loss of an in-service unit.

It is proposed to run SGT3 on open standby and for the loss/opening of SGT1 (CB1380) or SGT2 (CB1480) an instruction shall be issued to close the SGT3 circuit breaker (CB1080) in order to keep two SGTs in service at all times.

Programme	Completion: - Q3, 2025
Progress	Design: • Commenced. Consenting: • Not required Detailed Engineering: • Engineering Design Phase Tendering: • Commenced. Construction: • Under Review Commissioning/Close Out: • Under Review



<u>V1.3</u>	SPT-RI-2153 - Hopsrig substation Grid T1A transformer			
OVERVIEW OF WORKS Collector Sub Station. Establish a 132kV connection by installing a new 132kV line disconnector. Install a new 132/33kV 60MVA transformer and a new 33kV busbar.				
Programme	Completion: - September 2028			
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced			



<u>V1.1</u>	SPT-RI-2159 - Hopsrig Substation Grid T1A Transformer		
	OVERVIEW OF WORKS MVA transformer will be installed at Hopsrig collector substation. This will create a new w new generators to connect.		
Programme	Completion: - Under Review		
Progress	 Design: Some design packages are completed with the rest on hold awaiting customer signing of mod-apps with regards to change of connection dates Consenting: Complete Detailed Engineering: Some design packages are completed with the rest on hold awaiting customer signing of mod-apps with regards to change of connection dates Tendering: Still to be commenced Commissioning/Close Out: Still to be commenced 		



<u>V2.1</u>	SPT-RI-2164 - Whiteminhill to Mark Hill 275kV circuit			
OVERVIEW OF WORKS It is proposed to establish a Whiteminhill Renewable Energy Park Collector substation to accommodate two connections into Mark Hill 275kV. At Mark Hill 275kV substation, install a feeder bay with the associated 275kV circuit breaker and line isolators. From there, install approx. 6km of 275kV UGC to connect Mark Hill 275kV substation to Whiteminhill Energy Park Collector Substation. At Whiteminhill Energy Park Collector Substation, install a single 275kV busbar and one 275kV line isolator.				
Programme	Completion: - October 2030			
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced			



	-			
<u>V2.0</u>	SPT-RI-2165- Whiteneuk to Glenlee 132kV OHL and substation works			
	OVERVIEW OF WORKS			
To enable more connections in the area, the 132kV OHL circuit and associated substation works from Glenlee to Whiteneuk 132kV substations are to be made a shared TORI. The works involves installation of approximately 17km of trident woodpole OHL (EAGLE conductor) and ~0.5km of underground cable (2000mm2 Cu XLPE) and associated cable sealing ends between Whiteneuk and Glenlee substations.				
Programme	Completion: - June 2027			
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC			



<u>V2.2</u>	SPT-RI-2243 - Glenshimmeroch 132/33kV SS Transformer				
OVERVIEW OF WORKS To accommodate the connections at the proposed Glenshimmeroch collector substation (SPT-RI-274), a new 132/33kV 120MVA transformer will be installed, together with a new 33kV busbar.					
Programme	Completion: - October 2029				
Progress	Design: • In progress Consenting: • In progress Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced				



<u>V2.1</u>	SPT-RI-2249 - Kilmarnock South 275kV Fault Level Uprating			
OVERVIEW OF WORKS To allow the connection of a battery storage connection at Kilmarnock South 400kV the short circuit rating of Kilmarnock South 275kV needs to be increased from current design specification of 31.5kA to 40kA. This will include the assessment and uprating where necessary of equipment and structures to withstand a fault current of 40kA.				
Programme	Completion: - July 2025			
Progress	Design: • Still to commence Consenting: • Still to commence Detailed Engineering: • Still to commence Tendering: • Still to commence Construction: • Still to commence Commissioning/Close Out: • Still to commence			



<u>V1.2</u>	SPT-RI-2268 - BZ Route Reinforcements			
OVERVIEW OF WORKS New generation and battery storage connections into the Devol Moor – Neilston 132kV group have driven the need to re-instate the No.1 circuit of BZ Route between Erskine and Braehead Park. It is required to uprate existing OHL sections and install new cable sections. It is proposed to install 1x 280mm2 AAAC "Sycamore" conductor on the OHL sections operating at 75°C with similarly rated cable sections.				
Programme	Completion: - October 2031 – Under Review			
Progress	Design: • Still to commence Consenting: • Still to commence Detailed Engineering: • Still to commence Tendering: • Still to commence Construction: • Still to commence Commissioning/Close Out: • Still to commence			



V1.1	SPT-RI-2275 - Glenrothes GSP SGT1(2) LMS				
OVERVIEW OF WORKS					
conditions on the sin removed by the LMS A current and voltage	t Scheme (LMS) is required at Glenrothes 275/33kV GSP in order to prevent overload igle transformer when the other transformer is out of service. The overload will be b tripping the appropriate non-firm connections. e measurement is required on the LV side of each transformer so the direction, as well as ower flow through the transformer can be determined. This SPT LMS will be required to e DNO (SPD).				
Programme	Completion: - October 2025				
Progress	Design: In progress Consenting: Obtained Detailed Engineering: Still to be commenced. Tendering: Completed Construction: Still to be commenced. Commissioning/Close Out: Still to be commenced.				



<u>V2.0</u>	SPT-RI-2301 - New Cumnock-Clawfin Collector		
OVERVIEW OF WORKS At New Cumnock Board "A" a new 132kV circuit breaker will be installed with a new 132kV cable circuit out to Clawfin Collector substation. The cable circuit shall require a capacity of 182MVA.			
Programme	Completion: - October 2027		
Progress	Design: In progress Consenting: Still to be commenced Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced		



V1.2	SPT-RI-2317- Dalmally to Windyhill 275kV Reinforcement				
Creag Dhubh 275kV	OVERVIEW OF WORKS Iditional generation on the Cruachan – Windyhill 275kV network, as well as the addition of ' substation (to be constructed by SHETL), it is proposed to uprate the existing overhead d No.2 between Dalmally and Windyhill 275kV substations from twin Totara operating at hinimum.				
Programme	Completion: - June 2027				
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC				



V1.0

SPT-RI-2319- Carradale – Kilmarnock South Subsea Cable

OVERVIEW OF WORKS

This project has been developed in partnership with Scottish Hydro Electric Transmission plc (SHE Transmission) and comprises the installation of two 240MVA 220kV cable circuits from Carradale to Kilmarnock South 400kV Substation. This twin cable circuit will provide additional capacity and accommodate addition generation in the Argyll area.

The project comprises the following elements:

Т

- Installation of 2 x 240MVA 220kV subsea cable circuits from Carradale (SHE Transmission) to the South of Troon; and
- Installation of two underground cable circuits from the South of Troon to Kilmarnock South and two associated 400/220kV transformer at Kilmarnock South (SP Transmmission).

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The proposed third 220kV circuit will have the following circuit ratings:

Amps	MVA	Amps	Ν	IVA	Amps	MVA
Pre-Fault Continuous	630	240	630	240	630	240
Post-Fault Continuous	630	240	630	240	630	240

Programme	Completion: - October 2032
Progress	Design:Still to be commenced
	Consenting:Still to be commenced
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	 Commissioning/Close Out: Still to be commenced



V1.2

SPT-RI-2320 – ZV Route Extension to Wyseby 400kV Substation

OVERVIEW OF WORKS

The works shall turn in both sides of ZV route to the new Wyseby 400kV substation which shall be constructed as part of this project. This new site shall include a new 22-panel GIS 400kV DBB substation with 2 x 400kV bus couplers, 2 x 400kV bus sections and 4 x 400kV feeder bays to accommodate the ZV route turn in.

The turn in of the ZV Route circuits shall create a Moffat-Wyseby 400kV circuit, an Elvanfoot-Wyseby 400kV circuit, a Wyseby-Gretna 400kV circuit, and a Wyseby-Harker 400kV circuit. This will require changes to the existing protection arrangements on these circuits as well as possible reconfiguration of the series compensation units installed at both Moffat and Gretna to maintain the export across B6.

Programme	Completion: October 2031
Progress	 Design: Commenced – early design in progress
	Consenting: • Still to be commenced
	Detailed Engineering: Still to be commenced
	Tendering: Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.1</u>	SPT-RI-2321- Cruachan to Dalmally 275kV OHL Circuit Uprate
	OVERVIEW OF WORKS ditional generation at Cruachan 275kV substation, it is proposed to uprate the existing s No.1 and No.2 from Cruachan to Dalmally 275kV substation from twin Totara operating minimum.
Programme	Completion: - June 2027
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC



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<u>V2.0</u>
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SPT-RI-2323- Livingston East to Currie 132kV Circuit Uprate

OVERVIEW OF WORKS

To accommodate the currently connected, contracted and future additional generation embedded at Livingston East GSP, it is proposed to uprate the existing 132kV circuit (comprising overhead line and underground cable) between Livingston East 132/33kV GSP and Currie 132kV substation.

The proposed arrangement will provide the following circuit ratings (based on Poplar conductor at 65°C, Resistivity $3.12\mu\Omega.cm$):

Amps	MVA	Amps	Ν	1VA	Amps	MVA
Pre-Fault Continuous	570	130	540	123	485	111
Post-Fault Continuous	675	154	640	147	580	133

Programme	Completion: - June 2027
Progress	Design: • Still to be commenced
	Consenting: • Still to be commenced
	Detailed Engineering: Still to be commenced
	Tendering: • Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V2.1</u>	<u>SPT-RI-2352</u>
 Devonside - Westfi Bonnybridge – Stirl Any overload on eith 	OVERVIEW OF WORKS t Scheme (LMS) is required at Stirling and Devonside GSP to monitor circuit loadings on: eld 132kV OHL Circuit ing/Devonside 132kV Cable Section er circuit will be removed by the LMS scheme managing the appropriate non-firm ropriate LMS outstations.
Programme	Completion: - 30/04/2029
Progress	Design: • Still to be commenced Consenting: • Still to be commenced • Still to be commenced • Still to be commenced Tendering: • Still to be commenced • Still to be commenced • Still to be commenced Construction: • Still to be commenced • Still to be commenced • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V2.1</u>	SPT-RI-2389- DE Route Tower
tension tower on DE a tee off connection	OVERVIEW OF WORKS date a generation connection in this area it is required to construct a new Route in between towers DE3 and DE4. This new tower shall be able to facilitate for a new 132kV OHL to be constructed out to the User's substation. The OHL substation are covered under a separate connection offer.
Programme	Completion: - July 2030
Progress	Design: In progress Consenting: Still to be commenced Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



<u>V2.0</u>

SPT-RI-2415- AA Route OHL Uprate

OVERVIEW OF WORKS

Version 1.1 Page 3

1 The Construction Project

1.1 Project Description

The connected and contacted generation at Bathgate and Drumcross GSP have reached the level that will exceed the intact capacity of the existing 132kV OHL AA Route (BAGA-BONN). It is proposed to carry out thermal uprating on the AA Route to increase the rating to 220MVA per circuit in order to provide a higher rating to remove the overload under an intact system.

Programme	Completion: - Octobr 2026
Progress	Design:Still to be commenced
	Consenting:Still to be commenced
	Detailed Engineering: Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.1</u>	SPT-RI-2436 - Easterhouse 275kV Fault Level Mitigation Works
	OVERVIEW OF WORKS w 132kV GIS substation at Westfield to replace existing AIS. This will facilitate new e area. The location of this substation is currently planned to be constructed within a free 75kV compound.
Programme	Completion: - June 2027
Progress	Design: • Still to commence Consenting: • Still to commence Detailed Engineering: • Still to commence Tendering: • Still to commence Construction: • Still to commence Commissioning/Close Out: • Still to commence



<u>V1.0</u>	SPT-RI-2447 - Westfield 132kV GIS Substation
	OVERVIEW OF WORKS w 132kV GIS substation at Westfield to replace existing AIS. This will facilitate new e area. The location of this substation is currently planned to be constructed within a free 75kV compound.
Programme	Completion: - Under review
Progress	Design: In Progress Consenting: Still to be commenced Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



<u>V1.3</u>

SPT-RI-2454 - Currie-Broxburn Second Intertrip

OVERVIEW OF WORKS

Currently there is no main protection at Broxburn-Currie and the current protection arrangement at Broxburn/Currie is out with the current policy document (PROT-01-107). Furthermore, as the generation at Broxburn exceeds that of 50% of one grid transformer (45MVA) there is a need to install a second intertrip.

Works include the following:

- Installation of a second intertrip at Broxburn and Currie
- Removal of LVDOC at Broxburn

Programme	Completion: - September 2024
Progress	Design: • Complete
	Consenting:
	Not Applicable
	Detailed Engineering: • Complete
	Tendering:
	Complete
	Construction:
	Still to be commenced
	Commissioning/Close Out:
	Still to be commenced



<u>V1.2</u>	<u> SPT-RI-2462 - Cruachan – Dalmally Load Management Scheme</u>
the Cruachan – Dalm proposed to install a monitor the Dalmally service, a signal will	OVERVIEW OF WORKS arge volume of new renewable generation in the Argyll area whilst being able to operate hally – Creag Dhubh – Windyhill 275kV network in a safe and efficient manner, it is Load Management Scheme (LMS) at Cruachan and Dalmally 275kV substations to – Inverarnan and Dalmally Creag Dhubh 275kV circuits such that if one circuit is out of be sent to appropriate generator(s) to constrain the (generation) export and (pumping revent any transmission circuits overloads.
Programme	Completion: - September 2030
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.1</u>	SPT-RI-2482 - Cruachan 275kV Tower and OHL Works
substation, a new ste	OVERVIEW OF WORKS 5kV circuit breaker (associated with Cruachan Units 3 & 4) to be installed at Cruachan eel tower and a section of 275kV overhead line will be required. The overhead line th the Cruachan – Dalmally 275kV circuit arrangement (twin Totara operating at 50°C).
Programme	Completion: - TORI no longer required
Progress	Design: • N/A Consenting: • N/A Detailed Engineering: • N/A Tendering: • N/A Construction: • N/A Commissioning/Close Out: • N/A



V1.2

SPT TORI Quarterly Report Q2 2025

<u>SP</u>

<u> SPT-RI-2510 - Saltcoats A GT OLP</u>

OVERVIEW OF WORKS

A Load Management Scheme (LMS) is required at Saltcoats "A" 132/33kV GSP in order to prevent overload conditions on the single transformer when the other transformer is out of service. The overload will be removed by the LMS tripping the appropriate non-firm connections.

A current and voltage measurement is required on the LV side of each transformer so the direction, as well as magnitude, of the power flow through the transformer can be determined. This SPT LMS will be required to transfer the following signals to the DNO (SPD):

- A Stage 1 Signal at 95% of the transformer rating for an import & export Condition
- A Stage 2 Signal at 100% of the transformer rating for an import & export Condition
- A Stage 3 Signal at 120% of the transformer rating for an import & export Condition

Programme	Completion: - August 2028
Progress	Design: • Still to be commenced
	Consenting: • Still to be commenced
	Detailed Engineering: Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.2</u>	SPT-RI-2511 - Dalmarnock Loss of Main TORO 2511	
	OVERVIEW OF WORKS Loss of Mains system at Dalmarnock substation to facilitate and number of new connections on the 33kV SPD side. Currently contracted TOCO's are Dalmarnock BESS battery, Rutherglen Battery and HEX044.	
Programme	Completion: - Under Review	
Progress	Design: • Complete Consenting: • NA Detailed Engineering: • Complete Tendering: • Complete Construction: • Underway Commissioning/Close Out: • Still to be commenced	



<u>V1.2</u>	SPT-RI-2537 - Strathaven 400kV Compound Extension	
	OVERVIEW OF WORKS Extension proposed at Strathaven 400kV compound to redirect Strathaven-Wishaw circuit into a new bay. This will facilitate other TOCO works.	
Programme	Completion: - April 2027 – Under review	
Progress	 Design: In Progress Consenting: Commencing environmental surveys ahead of submitting planning application for extension. Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced 	



<u>V2.5</u>	SPT-RI-2591 - Stirling GSP GT1 (2) LMS Scheme
OVERVIEW OF WORKS A Load Management Scheme (LMS) is required at Stirling 132/33kV GSP in order to prevent overload conditions on the single transformer when the other transformer is out of service. The overload will be removed by the LMS tripping the appropriate non-firm connections. A current and voltage measurement is required on the LV side of each transformer so the direction, as well as magnitude, of the power flow through the transformer can be determined.	
Programme	Completion: - January 2029
Progress	Design: • Compete Consenting: • N/A Detailed Engineering: • Complete Tendering: • Complete Construction: • Still to commence Commissioning/Close Out: • Still to commence



<u>V1.0</u>	SPT-RI-2608 - Mossmorran 132 to Halbeath Tee Uprating
OVERVIEW OF WORKS Due to generation teeing into the CP Route No.1 circuit it is required to reconductor approximately 5.7km of new 132kV HTLS "EAGLE" conductor from the generator tee-off point back to Mossmorran 132kV substation.	
Programme	Completion: - July 2029
Progress	Design: • Commenced Consenting: • Not required Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.0</u>	SPT-RI-2622 - Westfield GT1(2) Overload Protection Scheme	
	OVERVIEW OF WORKS The implementation of a load management scheme to be established at Redhouse 132/33kV GSP, to remove overload by tripping appropriate non-firm connections.	
Programme	Completion: - April 2025	
Progress	Design: • Commenced Consenting: • Not required Detailed Engineering: • Commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced	



<u>V1.1</u>	SPT-RI-2625 - Windyhill 275kV Fault Level Uprating
OVERVIEW OF WORKS To allow additional generation connection in the area, the short circuit rating of Windyhill 275kV, post completion of SPT-RI-2791 Windyhill 275kV Substation Modernisation, is required ensure specification of 40kA. It is anticipated that this will include the survey assessment and uprating where necessary of equipment and structures associated with the MSCDN bay to withstand a fault current of 40kA.	
Programme	Completion: - September 2027 – Under Review
Progress	 Design: Initiated with result of surveys required to complete design Consenting: Still to be commenced Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



<u>V2.1</u>

<u>SPT-RI-2691 - Windyhill, Strathleven, Helensburgh, Sloy Load</u> <u>Management Scheme</u>

OVERVIEW OF WORKS

Load management scheme required here shall monitor the two double circuits out of Windyhill heading to Helensburgh/Strathleven/Sloy. This LMS shall continually measure the loadings on the following circuits making up CK and CL Routes:

CK Route	CL Route
Windyhill to Helensburgh 132kV Circuit	Windyhill to Strathleven 132kV Circuit
Helensburgh to Sloy 132kV Circuit	Strathleven to Sloy 132kV Circuit
Windyhill to Whistlefield-Dunoon-Sloy 132kV Circuit	Windyhill to Whistlefield-Dunoon-Sloy 132kV Circuit

Programme	Completion: - Q3, 2025
Progress	Design: • Commenced.
	Consenting:
	Not Required. Detailed Engineering:
	Engineering Design Phase
	Tendering:Commenced.
	Construction: • Under Review
	Commissioning/Close Out: • Under Review



V1.0	SPT-RI-2709 - CE Route Reconductoring and KILW-HUER Cable	
<u>v1.0</u>	<u>Replacement</u>	
OVERVIEW OF WORKS The connected and contacted generation at Kilwinning 132/33kV substation has reached the level that will exceed the intact capacity of the existing 132kV OHL CE Route (KILW-HUNF-HUER). It is proposed to reconductor the OHL route with 425mm ² 'Totara' AAAC @ 75°C to achieve a minimum rating of 220MVA per circuit.		
In addition to the OHL works above; it is also proposed to replace the existing ~3.2km of 132kV cable between KILW-HUNF and HUNF-HUER to achieve a similar 220MVA rating per circuit. Programme Completion: - Under review		
Progress	Design:	
	 Still to be commenced Consenting: Still to be commenced Detailed Engineering: Still to be commenced 	
	Tendering: • Still to be commenced Construction:	
	 Still to be commenced Commissioning/Close Out: Still to be commenced 	



<u>V1.1</u>

SPT-RI-2711 - AP Route 132kV Uprating

OVERVIEW OF WORKS

The connected and contracted generation at Broxburn GSP has reached a level that will exceed the intact capacity of the existing 132kV OHL AP Route (BROX-CURR) on the No.1 Circuit. It is proposed to reconductor the No.1 Circuit on the AP Route with LARK conductor which will operate at 190°C. The increased rating will provide 191MVA to provide a higher rating to remove the overload under an intact system.

Furthermore, the No.1 Circuit of the 132kV cable section entry into Currie 132kV substation will also need replaced to achieve 191MVA loading on this circuit. It is proposed to replace the No.1 Circuit with a single 1600mm AL cable.

Additionally, the cost of replacing the existing cable section (130MVA rated) before the end of life will be recovered through TNUoS.

Programme	Completion: - October 2028
Progress	 Design: Still to be commenced
	Consenting:Still to be commenced
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: • Still to be commenced



	I
V/4_4	SPT-RI-2732 - Busbar Extension and XZ032 Terminal Tower
<u>V1.1</u>	Modifications
	OVERVIEW OF WORKS
To accommodate a generation connection in this area it is required to extend the existing busbars to the east and also make modifications to the existing XZ032 terminal tower. The completion of this work will create for two additional 275kV feeder bays at Ayr 275/33kV substation.	
Programme	Completion: - October 2027
Progress	Design:
5	Commenced
	Consenting:
	Not required
	Detailed Engineering:
	Commenced
	Tendering:
	Still to be commenced
	Construction:
	Still to be commenced
	Commissioning/Close Out:
	Still to be commenced



<u>V1.0</u>	SPT-RI-2784 - CL & CK Route Temperature Uprating
	OVERVIEW OF WORKS
Helensburgh and Slo	overloads on the 132kV circuits on CL and CK Routes between Windyhill, Strathleven, by substations it is required to increase the operating temperature of the circuits from increase in operating temperature provides sufficient headroom to remove any intact he system.
Programme	Completion: - August 2029
Progress	Design:
	Still to be commenced
	Consenting:
	Still to be commenced
	Detailed Engineering:
	Still to be commenced
	Tendering:
	Still to be commenced
	Construction:
	Still to be commenced
	Commissioning/Close Out:
	Still to be commenced



<u>V2.2</u>	SPT-RI-2792 - Glenmuckloch to Lethans Collector 132kV Circuit
cable circuit shall be	OVERVIEW OF WORKS III a new 132kV double busbar bay at Glenmuckloch 132kV substation. From here a 132kV installed out to the new Lethans Collector 132kV substation where a 132kV line installed alongside a 132kV busbar. This substation shall be created and constructed by
Programme	Completion: - June 2027 – Under Review
Progress	Design: • Cable routing in progress • Substation layout being developed Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Construction: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.1</u>	SPT-RI-2802 - Artfield Tee to NETS 132kV OHL Uprate
OVERVIEW OF WORKS In order to alleviate overloads on the 132kV circuit between the proposed tee location and Newton Stewart (on BT Route No.1 side) associated with the connection of the Artfield Forest Windfarm (SPT-TOCO-2629), it is required to uprate the stretch of circuit. It is proposed to uprate the stretch of circuit with 250mm2 AAAC (Sycamore), which will provide sufficient headroom to remove any intact overloads seen on the system.	
Programme	Completion: - June 2030
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V2.2</u>	SPT-RI-2814 - Devonside 132kV GIS Substation
OVERVIEW OF WORKS At Devonside 132kV it is proposed to establish a new indoor GIS Double Busbar substation The building is proposed to be sized to accommodate 14 bays. **Needs Case Under Review**	
Programme	Completion: - Under review
Progress	Design: • Under Review Consenting: • Under review Detailed Engineering: • Under Review Tendering: • Under Review Construction: • Under Review Commissioning/Close Out: • Under Review



<u>V1.0</u>	SPT-RI-2815 - Denny North 275/132kV Super Grid Transformer
OVERVIEW OF WORKS It is proposed to the install a new 275/132kV 240MVA Super Grid Transformer at Denny North 275/132kV substation as well as reconfiguring and uprating of the existing Denny North – Bonnybridge 132kV (CN Route) high-capacity circuit.	
Programme	Completion: - April 2030
Progress	Design: In progress Consenting: In progress Detailed Engineering: Not started Tendering: Not started Construction: Not started Commissioning/Close Out: Not Started



<u>V2.1</u>	SPT-RI-2825 - Kelloe Mains 400kV Substation
OVERVIEW OF WORKS The works shall create a new 400kV substation named Kelloe Mains 400kV substation which shall turn in both sides of ZT Route to connect it to the SPT system. The substation shall consist of four new double busbar bays for the ZT Route circuits, a 400kV bus coupler, a 400kV bus-section circuit breaker, and a minimum of two additional 400kV bays to accommodate new connections.	
Programme	Completion: - November 2029
Progress	Design: • Early design in progress. Consenting: • Still to commence Detailed Engineering: • Still to commence Tendering: • Still to commence Construction: • Still to Commence Commissioning/Close Out: • Still to commence



<u>V2.0</u>	SPT-RI-2826 - Hagshaw Tee to Bankend Rig III Collector Substation
OVERVIEW OF WORKS Install a new 132kV trident wood pole circuit between the tee off with Hagshaw Hill Ph3 WF and the Bankend Rig III Collector Substation. A new 132/33kV Collector Substation (Bankend Rig III Collector) is to be established with a 132/33kV 120MVA transformer.	
Programme	Completion: - April 2030
Progress	 Design: Initial early stages of design have commenced. Consenting: Initial early stages of consenting have commenced. 1st round of public consultation due to take place Q2-2025 for OHL Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



<u>V2.0</u>	SPT-RI-2827 - Redshaw to Hagshaw Tee 132kV Circuit	
	OVERVIEW OF WORKS	
Construct a new 132kV double busbar bay at Redshaw 132kV substation and from here install a new 132kV cable/OHL circuit.		
Programme	Completion: - July 2031	
Progress	Design:	
	 Initial early stages of design have commenced. 	
	Consenting:	
	 Initial early stages of consenting have commenced. 	
	 1st round of Public consultation due to take place Q2 - 2025 	
	Detailed Engineering:	
	Still to be commenced	
	Tendering:	
	Still to be commenced	
	Construction:	
	Still to be commenced	
	Commissioning/Close Out:	
	Still to be commenced	



V2.0

SPT-RI-2828 - Broxburn GSP Loss of Mains Signals

OVERVIEW OF WORKS

To protect against islanding of the SPD system with Almondell Lodge BESS & Development still connected to it there is a requirement to monitor the 33kV circuit breaker position of both GT1 and GT2 (Line End Open - LEO). For the opening of the 33kV circuit breakers SPD will be sent a trip signal to trip SPD embedded generation.

Works will include the following:

- Monitor 33kV circuit breaker position of GT1 and GT2 at Broxburn 132/33kV
- For opening of the 33kV circuit breakers SPD will be sent a trip signal to trip SPD embedded generation.

Programme	Completion: - September 2024
Progress	Design: • Complete
	Consenting:
	• N/A
	Detailed Engineering: • Complete
	Tendering:
	Complete
	Construction:
	Still to be commenced
	Commissioning/Close Out:
	Still to be commenced



<u>V1.0</u>	SPT-RI-2832 - Hunterston East 132kV GIS Substation		
	OVERVIEW OF WORKS		
GA6 air blast circuit-l	The existing Hunterston 132kV AIS substation was installed and commissioned in 1960 and contains 18 x AEI GA6 air blast circuit-breaker bays. As part of the condition assessment of the equipment it has been indicated that the in-service circuit-breakers (10-off) have reached end of their useful life and shall be replaced.		
which shall accommo • 2 x SGT tran • 3 x Feeder b	 It is proposed that the existing Hunterston 132kV indoor switchboard be replaced with a new GIS building which shall accommodate 11 bays of non-SF6 gas insulated switchgear bays with the following circuits: 2 x SGT transformer bays (SGT1 and SGT2). 3 x Feeder bays (Hunterston Farm1-Kilwinning, Hunterston Farm2-Saltcoats and Kilwinning- 		
Saltcoats).			
1 x Bus-coup			
 1 x Bus-section 			
 Future provis 	sion for 4 x spare feeder bays.		
Programme	Completion: - March 2028		
Progress	Design:		
	Complete		
	Consenting: • TBC		
	Detelle I De ala seia a		
	Detailed Engineering:		
	• TBC		
	Tendering:		
	• TBC		
	Construction:		
	• TBC		
	Commissioning/Close Out: • TBC		



<u>V2.0</u>	SPT-RI-2833 - Devol Moor 400kV GIS substation
OVERVIEW OF WORKS At Devol Moor 400kV it is proposed to establish a new indoor GIS Double Busbar substation. The building is proposed to be sized to accommodate 14 bays.	
Programme	Completion: - October 2029
Progress	 Design: Draft layout of Devol Moor GIS Substation prepared. Internal layout of substation to be finalised to allow for surveys to begin. Consenting: Still to be commenced Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



WCN2 SPT-RI-2876, SPT-RI-3309, SPT-RI-3498, SPT-RI-2877, SPT-RI-3566, SPT-RI-2862, SPT-RI-3315 – West Coast Onshore B6 reinforcement

OVERVIEW OF WORKS

2862: - The works here shall create a new 400kV substation named Dumfries North 400/132kV substation which shall connect into both sides of the new 400kV OHL double circuit proposed under SPT-RI-2877. The substation shall consist of two new double busbar AIS bays for the WCNC Route circuits, a double busbar AIS bay for the Craig Moss Farm connection, a 400kV AIS bus coupler and a 400kV bus section.

2876: - This TORI shall construct a new Killoch 400kV substation to feed the new Killoch 275kV substation via three new 400/275kV SGT's, diversion and 400kV uprating of the existing XY route between Kilmarnock South and the new Killoch 400kV substations and the 400kV uprating of the WA route between the new Killoch 400kV and New Cumnock North 400kV substations.

3309: - To accommodate new generation connection in the New Cumnock including the South-West Scotland area, it is proposed to establish a new 400kV substation in the vicinity of the existing New Cumnock 275kV substation. This shall be a double busbar GIS 'New Cumnock North' 400kV substation. This new substation shall facilitate the development of the NOA WCNC scheme (currently under review).

3315: - To accommodate new generation connection in the New Cumnock including the South-West Scotland area, it is proposed to establish a new double circuit OHL between (the proposed) New Cumnock North and Glenmuckloch 400kV substation.

3498: - Under the NOA7 Refresh the need was identified to develop a new west coast onshore high-capacity corridor over the B6 boundary between Scotland and England to increase the transfer capability across this transmission boundary. This project is driven by the continued increase in required transfers seen across this boundary due to the need to connect renewable generation in Scotland to achieve UK and Government's net zero target by 2050 and 2045 respectively.

3566: - Establish a new 275kV GIS double busbar system in the vicinity of Killoch 400kV (to be established under SPT-RI-2876) that includes the following:

Programme	Completion: - 2037
Progress	Current stage(s): Optioneering Next stage: Optioneering end date/ design and development start date



<u>V1.1</u>	SPT-RI-2885 - BT Route 132kV Uprating (Circuit No.1)	
OVERVIEW OF WORKS In order to alleviate overloads on the 132kV circuit between the proposed tee location and Newton Stewart (on BT Route No.1 side) associated with embedded generation connections into Glenluce GSP, it is required to uprate the stretch of circuit. It is proposed to uprate the stretch of circuit with approximately 22km of 250mm2 AAAC (Sycamore), which will provide sufficient headroom to remove any intact overloads seen on the system.		
Programme	Completion: - Under Review	
Progress	Design: • Under Review Consenting: • Under Review Detailed Engineering: • Under Review Tendering: • Under Review Construction: • Under Review Commissioning/Close Out: • Under Review	



<u>V2.0</u>	SPT-RI-2877 - West Coast Onshore Reinforcement (South Section)	
OVERVIEW OF WORKS This TORI shall construct a new 400kV double circuit OHL using L13 / L12X towers and a triple Araucaria conductor bundle from Dumfries North substation to the SPT/NGET border which is approximately 36km away. NGET shall then complete the circuit from the border to an appropriate substation.		
Programme	Completion: October 2036	
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced	



<u>V1.2</u>	<u>SPT-RI-2905 - Mossmorran, Glenniston, Westfield, Redhouse 132kV</u> <u>Circuits LMS</u>
OVERVIEW OF WORKS The implementation of a load management scheme at Mossmorran 132kV substation GSP.	
Programme	Completion: - October 2026
Progress	Design: • Still to be commenced Consenting. • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.0</u>	SPT-RI-2907 - Cockenzie 400/132kV Substation
OVERVIEW OF WORKS A new 400/132kV substation will be installed at the Gresham House Devonside Substation via a tee-off with ZA route (No.2 circuit ZA001A Tower). A new 400kV disconnector circuit breaker will be installed at the new substation, along with a 360MVA 400/132kV Super grid transformer. A new 132kV busbar will be established in order to accommodate the Gresham House Cockenzie BESS 240MW (SPT-TOCO-2434) and Cockenzie BESS Elbess 102MW (SPT-TOCO-2819).	
Programme	Completion: - October 2026
Progress	Design: In progress Consenting: In progress Detailed Engineering: In progress Tendering: In progress Construction: In progress Construction: Still to be commenced, awaiting Platform handover from Customer Commissioning/Close Out: Still to be commenced



<u>V1.1</u>	SPT-RI-2922 - Dalmarnock 132/33kV T1(2) OLP Scheme
OVERVIEW OF WORKS	

An overload protection scheme is required at Dalmarnock 132/33kV GSP in order to prevent overload conditions on the single transformer when the other transformer is out of service. The overload will be removed by the OLP tripping the appropriate non-firm connections.

A current and voltage measurement is required on the LV side of each transformer so the direction, as well as magnitude, of the power flow through the transformer can be determined. This SPT OLP will be required to transfer the following signals to the DNO (SPD):

- A Stage 1 Signal at 95% of the transformer rating for an import & export Condition *3
- A Stage 2 Signal at 100% of the transformer rating for an import & export Condition
- A Stage 3 Signal at 120% of the transformer rating for an import & export Condition

Note: These values will be subject to change following detailed design, User input and optimisation of the system

The signals initiated by the LMS will be transferred to the DNO (SPD) connected embedded generation.

Completion: - Project has been terminated
Design: • Terminated
Consenting: • Terminated
Detailed Engineering: • Terminated
Tendering: • Terminated
Construction: • Terminated
Commissioning/Close Out: • Terminated



V4 0	SPT-RI-2927 - Elvanfoot 132kV to Elvanfoot Energy Storage
<u>V1.0</u>	132/33kV Collector Substation
	OVERVIEW OF WORKS
It is proposed to extend the existing Elvanfoot substation platform to accommodate a new 132kV bay. From here a new 132kV circuit will be installed to the Elvanfoot Energy Storage Collector substation where a 132/33kV 90MVA transformer will be installed alongside a 33kV 3 Panel Board. The 3 Panel Board will provide three total circuit breakers with one circuit breaker being classed under this TORI and the other two being installed for the two separate connections which have been charged as A1 Connection Asset costs to both connections.	
Programme	Completion: - October 2029
Progress	Design:
	Still to be commenced
	Consenting.
	Still to be commenced
	Detailed Engineering:
	Still to be commenced
	Tendering:
	Still to be commenced
	Construction:
	Still to be commenced
	Commissioning/Close Out:
	Still to be commenced



<u>V1.0</u>

<u>SPT-RI-2935 - Windyhill-Whistlefield-Dunoon-Sloy 132kV OHL</u> <u>between CM01 and CM12</u>

OVERVIEW OF WORKS

New generation at SHETL's Dunoon 132kV substation necessitates an uprating of the 132kV shared circuit between Dunoon and the tee into the Sloy-Windyhill circuit. SPT's portion of the circuit runs between tower CM01 and mid span between CM13/14. The circuit presently uses 125mm2 ACSR Tiger conductor.

It is proposed that SPT uprate the double circuit to Sycamore 280mm2 conductor (operated at 90°C) from CM1 to CM12. It is assumed SHETL will uprate over the boundary span between CM14 and CM13, terminating at tower CM12.

Programme	Completion: - August 2029
Progress	Design:Still to be commenced
	Consenting: • Still to be commenced
	Detailed Engineering: Still to be commenced
	Tendering: Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced



SPT-RI-2936 - Coatbridge Overload Protection Scheme SGT1(2) V1.1

OVERVIEW OF WORKS

An Overload Protection Scheme (OLP) is required at Coatbridge 275/33kV GSP in order to prevent overload conditions on the single transformer when the other transformer is out of service. The overload will be removed by the OLP tripping the appropriate non-firm connections.

A current and voltage measurement is required on the LV side of each transformer so the direction, as well as magnitude, of the power flow through the transformer can be determined. This SPT LMS will be required to transfer the following signals to the DNO (SPD):

- A Stage 1 Signal at 95% of the transformer rating for an import & export Condition *3
- A Stage 2 Signal at 100% of the transformer rating for an import & export Condition
- A Stage 3 Signal at 120% of the transformer rating for an import & export Condition

Note: These values will be subject to change following detailed design, User input and optimisation of the system

The signals initiated by the LMS will be transferred to the DNO (SPD) connected embedded generation.

Programme	Completion: - October 2026
Progress	 Design: Still to be commenced
	Consenting: • Still to be commenced
	Detailed Engineering: Still to be commenced
	Tendering: Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V2.1</u>	SPT-RI-2957 - Dalmarnock SGT1, SGT2, Charlotte Street 1 & 2 DCBs	
OVERVIEW OF WORKS To comply with SQSS circuit complexity as per Appendix B and accommodate a new generation and demand connection within the Dalmarnock area of the network, there is a requirement to replace the H13A & H23A disconnector at Dalmarnock 275/132kV substation with a DCB. Additionally, there is also a requirement to replace the H13B & H23B disconnector at Dalmarnock 275/132kV substation with a DCB.		
Programme	Completion: - April 2030	
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced	



<u>V1.1</u>	SPT-RI-2960 - Neilston SGT3A and SGT3B Overload Protection
	Scheme
	OVERVIEW OF WORKS
either SGT3Å or SG Monitor 13 Monitor 27 For the ope connected All associa	ted protection and control works. ted environmental and civil works.
Programme	Completion: - October 2025
Progress	Design: Still to be commenced
	Consenting:
	Still to be commenced
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction:
	Still to be commenced
	Commissioning/Close Out:



<u>V1.1</u>	SPT-RI-2963 - Branxton to Eccles Further Uprating
OVERVIEW OF WORKS In order to alleviate the overloads identified as part of the system studies conducted it is necessary to reconductor both sides of the Branxton to Eccles circuits with twin HTLS "Curlew" conductor. This conductor shall give a summer pre-fault rating on the circuit of 2590MVA.	
Programme	Completion: - Under review
Progress	Design: • Under Review Consenting: • Under Review Detailed Engineering: • Under Review Tendering: • Under Review Construction: • Under Review Commissioning/Close Out: • Under Review



<u>V1.3</u>	<u>SPT-RI-2973 - Branxton to Springfield Collector 400kV Circuit and</u> <u>400/132kV SGT</u> OVERVIEW OF WORKS	
	A new 400kV double busbar circuit breaker bay at Branxton substation. From here a new 400kV circuit shall be installed out to the new collector substation named Springfield Collector 400/132kV substation.	
Programme	Completion: - October 2031	
Progress	Design: • Commenced Consenting: • Commenced • Commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close out: • Still to be commenced	



<u>V1.0</u>

SPT-RI-3010 - Cupar GSP Loss of Mains Signals

OVERVIEW OF WORKS

There is a requirement to install a Loss of Mains intertrip scheme at Cupar GSP to mitigate any risk of the SPD system becoming islanded. The intertrip scheme with Interface with the following circuit breakers at Cupar and monitor their position:

- Grid 1 CB
- Grid 2 CB

For the opening of Grid 1 and Grid 2 circuit breakers, a trip signal shall be issued to SPD to trip appropriate non-firm embedded generation.

Programme	Completion: - October 2026
Progress	Design:Still to be commenced
	Consenting:Still to be commenced
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.1</u>	SPT-RI-3015 - Gresham House Gretna 400/132kV Substation
OVERVIEW OF WORKS A new 400/132kV substation will be installed at the Gresham House Gretna Substation site. An extension of Gretna 400kV substation is required to accommodate a new feeder bay. At Gretna 400kV substation a new 400kV feeder bay and associated DBB switchgear (circuit breaker, line isolator and DBB disconnectors). From here a new 400kV UGC circuit will be laid to the Gresham House Gretna site. A new 400/132kV substation will be established with two 400/132kV 240MVA Suer Grid Transformers installed. A new 132kV busbar will be established to accommodate the Gresham House Gretna BESS 400MW (SPT-TOCO-2513) and GH DEVCO Gretna Green BESS 56MW (SPT-TOCO-2951).	
Programme	Completion: - June 2028
Progress	 Design: Commenced – early design in progress Consenting: Still to be commenced Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



<u>V1.0</u>	SPT-RI-3022 - Gresham House Gretna 400/132kV Substation
OVERVIEW OF WORKS A new 400/132kV substation will be installed at the Gresham House Gretna Substation site. An extension of Gretna 400kV substation is required to accommodate a new feeder bay. At Gretna 400kV substation a new 400kV feeder bay and associated DBB switchgear (circuit breaker, line isolator and DBB disconnectors). From here a new 400kV UGC circuit will be laid to the Gresham House Gretna site. A new 400/132kV substation will be established with two 400/132kV 240MVA Suer Grid Transformers installed. A new 132kV busbar will be established to accommodate the Gresham House Gretna BESS 400MW (SPT-TOCO-2513) and GH DEVCO Gretna Green BESS 56MW (SPT-TOCO-2951).	
Programme	Completion: - October 2031
Progress	Design: • Commenced – early design in progress Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.0</u>	SPT-RI-3027 - Redhouse 132kV circuit breaker	
There	OVERVIEW OF WORKS	
Programme	Completion: - completion date under review	
Progress	Design: Consenting: In line with TOCO 2868 Detailed Engineering: Initial works have commenced, in line with TOCO 2868 Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced	



<u>V1.0</u>

SPT-RI-3029- Ayr GSP 275/33kV Supergrid T1 & T2

OVERVIEW OF WORKS

A load management scheme required at Ayr 275/33kV GSP in order to prevent overload conditions on the single transformer when the other transformer is out of service. The overload will be removed by the LMS tripping the appropriate non-firm connections.

A current and voltage measurement is required on the LV side of each transformer so the direction, as well as magnitude, of the power flow through the transformer can be determined. This SPT LMS will be required to transfer the following signals to the DNO (SPD):

- A Stage 1 Signal at 95% of the transformer rating for an import & export Condition *3
- A Stage 2 Signal at 100% of the transformer rating for an import & export Condition
- A Stage 3 Signal at 120% of the transformer rating for an import & export Condition

Note: These values will be subject to change following detailed design, User input and optimisation of the system

The signals initiated by the LMS will be transferred to the DNO (SPD) connected embedded generation.

Programme	Completion: - October 2025
Progress	Design: Load Management Scheme design complete, Consenting:
	 N/A Detailed Engineering: Interface arrangements with replacement 33kV switchboard at Ayr GSP in progress
	Tendering: • Not Commenced
	Construction: Due to commence September 2025
	Commissioning/Close Out: • 30 September 2025



V1.1 SPT-RI-3052 - CE Route No.2 Circuit Reconductoring and HUNE- SACO-KILW Cable Replacement OVERVIEW OF WORKS In order to alleviate the overloads identified as part of the system studies conducted it is necessary to reconductor both sides of the Branxton to Eccles circuits with twin HTLS "Curlew" conductor. This conductor shall give a summer pre-fault rating on the circuit of 2590MVA.	
Programme	Completion: - August 2028
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V2.0</u>

SPT-RI-3060 - Redshaw 132kV "B" Board

OVERVIEW OF WORKS

In To facilitate the generation connections in the area it is required to establish a new 132kV double busbar substation, indicatively named Redshaw 132kV "B" board at the new Redshaw 400/132kV substation. The location of the SPT's new 400kV substation (which this 132kV double busbar site will connect into) will be connected in the existing ZV Route corridor (STHA-ELVA / COAL-ELVA) as well as facilitate the new double circuit from Glenmuckloch under SPT-RI-236. The 400kV substation at Redshaw is being constructed under SPT-RI-2060.

The 132kV double busbar substation to be established here will also require two 400/132kV 360MVA transformers which will connect into the 400kV substation being constructed under SPT-RI-2060. The scope of these works are:

Construct a new 132kV 12 bay double busbar substation with the following bays:

- 2 x 400kV feeder bays connecting into Redshaw 400kV substation
- 2 x 400/132kV 360MVA transformers
- 2 x 132kV transformer bays
- 1 x 132kV bus coupler
- 1 x 132kV bus section
- 8 x feeder bays for potential connections
- A Load Management Scheme (LMS) to continually monitor the loading of SGT1 and SGT4 at Redshaw 132kV B board
- All associated protection and control works.
- All associated environmental and civil works.
- Miscellaneous works.

Programme	Completion: - October 2028
Progress	 Design: GIS platform design and electrical red boundary design is complete.
	 Consenting: Consent process has started and is in Legal for engineering development and contract placement forecasted to be completed in July 2025.
	 Detailed Engineering: External design houses are now appointed for the enabling works and electrical works.
	Tendering:GIS contract awarded.Enabling works tender in progress.
	 Construction: Site Mobilisation and Earthworks forecasted to commence in November 2025.
	Commissioning/Close Out: • Still to Commence



<u>V2.0</u>	SPT-RI-3062 - Coylton to Maybole 132kV Circuit Uprating
	OVERVIEW OF WORKS
To accommodate the generation at Maybole GSP it is proposed to rebuild the route between Coylton and Maybole with a steel tower L7 route utilising twin UPAS conductor. The tee off circuit to Kilmarnock South will also be replaced with a new steel tower L7 route utilising single UPAS conductor on each side of the tower. The conductors will be tied together however such that the tee off connection is rated to the capacity as the Coylton to Maybole circuit.	
Programme	Completion: - October 2032
Progress	Design:
-	In progress
	Concenting
	Consenting: Still to commence
	Detailed Engineering:
	Still to commence
	Tendering:
	Still to commence
	Construction:
	Still to commence
	Commissioning/Close Out
	Commissioning/Close Out: Still to commence



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V2.1
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SPT-RI-3063 - Coylton SGT3 and Associated 132kV Circuit Breakers

OVERVIEW OF WORKS

The installation of SGT3 will require the 275kV busbars at Coylton to be extended and a new 275kV circuit breaker and associated disconnector to be installed. The nameplate rating of the SGT will be 240MVA which is in line with the other two installed units at Colyton. From here a 132kV circuit breaker shall be installed connecting to a 132kV cable circuit which shall connect into the existing 132kV busbar arrangement via a second 132kV circuit breaker. As well as the new SGT and the associated 275kV and 132kV switchgear a second 132kV bus section circuit breaker is required to split the 132kV busbar up and limit the risk associated with a 132kV busbar fault.

Programme	Completion: - October 2032
Progress	Design:Still to commence
	Consenting: Still to commence
	Detailed Engineering:Still to commence
	Tendering:Still to commence
	Construction: • Still to commence
	Commissioning/Close Out: Still to commence



<u>V2.1</u>	<u>SPT-RI-3068 - Teviot to Sundhope Collector Substation 132kV</u> <u>circuit</u>	
OVERVIEW OF WORKS		
	RI shall consist of the installation of two new 132kV double busbar circuit breaker bay at	

Teviot substation on the B board (established under **SPT-RI-2418**). From here a new 132kV double circuit shall be installed out to the new collector substation call Sundhope Collector 132/33kV substation. At the Soundhope Collector substation, install a double busbar system with one bus coupler and two double busbar bays. Allow space for future connections.

A Load Management Scheme (LMS) is required to manage connections affecting the Sundhope Collector to Teviot 'B' board double circuit to prevent overloads on these circuits. Any overload will be removed by the LMS managing the appropriate non-firm connection(s) via the interface with the connection(s).

Programme	Completion: - October 2033
Progress	Design:Still to be commenced
	Consenting: • Still to be commenced
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V2.0</u>

<u>SPT-RI-3091 - Kincardine 275kV (Shared) GIS Switchgear</u>

OVERVIEW OF WORKS

To facilitate new generation connection into Kincardine 275kV substation, it is proposed to install a new 275kV GIS switchgear and associated 275kV equipment at Kincardine 275kV GIS substation. Install approximately 1.2km of 275kV underground cable to Gresham House Kincardine BESS site where a new collector substation will be established.

At the Gresham House Kincardine BESS site (User's identified location), the User has requested to and therefore will be responsible for establishing a platform and associated structure solution to raise the platform above the flood risk level, including but not limited to, providing a permanent access road. The detail shall be agreed and approved by SPT.

Programme	Completion: - Under Review
Progress	Design: • Under Review
	Consenting:
	Under Review
	Detailed Engineering: • Under Review
	Tendering: • Under Review
	Construction:
	Under Review
	Commissioning/Close Out: • Under Review



<u>V1.0</u>	SPT-RI-3102- Rowancraig Wind Farm Collector Substation
OVERVIEW OF WORKS A new collector substation shall be installed to efficiently accommodate the three contracted windfarms in the Glenglass area. At Glenglass 132kV substation, install a new 132kV DBB feeder bay with associated switchgear (circuit breaker, line isolator and a DBB disconnector). From here install approx. 1.44km of new 132kV circuit which will be laid to the Rowancraig 132kV collector substation. At the collector substation, install a 132kV single busbar and one 132kV feeder bay with the associated switchgear.	
Programme	Completion: - Under Review
Progress	Design: • Substation and route location being established Consenting: • Ongoing Detailed Engineering: • To be commenced Tendering: • To be commenced • To be commenced Construction: • To be commenced Construction: • To be commenced Construction: • To be commenced Commissioning/Close Out: • To be commenced Commissioning/Close Out: • To be commenced Commissioning/Close Out: • To be commenced • To be commenced



<u>V1.0</u>	SPT-RI-3122 – Glenlee to Tongland OHL tower & associated works
OVERVIEW OF WORKS To accommodate a generation connection in this area it is required to construct a new tension tower on the Glenlee – Tongland 132kV No.1 circuit (post completion of SPT-RI-222). This new tower shall be able to facilitate a tee off connection for a new 132kV OHL to be constructed out to the User's substation.	
Programme	Completion: - June 2030
Progress	Design: • Still to be commenced Consenting: • Still to be commenced • Still to be commenced • Still to be commenced Tendering: • Still to be commenced • Still to be commenced • Still to be commenced Construction: • Still to be commenced • Still to be commenced • Still to be commenced Construction: • Still to be commenced • Still to be commenced • Still to be commenced



<u>V1.0</u>	SPT-RI-3144 - Nicolton Road 275kV substation
OVERVIEW OF WORKS The works here shall create a new 275kV substation named Nicolton Road 275kV substation which will loop in both the Currie – Grangemouth and Currie – Kincardine 275kV circuits (XM/XK Route) to connect to the SPT system. The substation shall consist of three new double busbar AIS bays for the XM/XK Route circuits, a double busbar AIS bay for the Nicolton Road BESS connection and a 275kV AIS bus coupler.	
Programme	Completion: - October 2030
Progress	Design: • Still to be commenced Consenting: • Still to be commenced • Still to be commenced • Still to be commenced Tendering: • Still to be commenced • Still to be commenced • Still to be commenced Construction: • Still to be commenced • Still to be commenced • Still to be commenced Construction: • Still to be commenced • Still to be commenced • Still to be commenced



<u>V1.1</u>	SPT-RI-3148 - Branxton BESS Collector Substation
OVERVIEW OF WORKS Establish a new shared collector substation. Install a new 400kV GIS bay at Branxton substation to accommodate the connection of two battery storage connections. From here a new 400kV circuit shall be installed out to the new shared substation indicatively named Branxton BESS 400/132kV Collector substation.	
Programme	Completion: - May 2029
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close out: • TBC



CVUP	<u>SPT-RI-3159 – Clydesmill – Strathaven 400kV uprating</u>

This project will establish a 400kV single circuit between Clydes Mill 400kV (proposed to established under SPT-RI-2083) and Strathaven 400kV. This will be achieved by reconductoring the existing 275kV No2 circuit (east most circuit on ZE route) between Clydes Mill and Strathaven to operate at 400kV. To maintain the second 275kV supply at East Kilbride 275kV the project will also include installation of a 275kV cable connection from Strathaven 275kV to the existing ZE/YZ tee junction near East Kilbride 275kV. The project will also reconductor the No.1 ZE route circuit such that it is rated for 400kV but remain operated at 275kV with a higher rating.

This project, originally proposed as the 'CVUP' NOA option, is primarily designed to connect the 400kV B5 circuit established initially through wider works scheme DWUP to the existing 400kV circuits between Strathaven and Torness, enhancing the B5 boundary capability, required to enable greater north to south power flows driven by the connection of renewable generation in the north of Scotland. This project will also increase fault infeed headroom at Clydesmill 275kV and Strathaven 275kV to facilitate new connections in this area.

Programme	Completion: - 2031
Progress	Current stage(s): • TBC Next stage: • TBC



SPT-RI-3168 – New circuit from north east Scotland to the Central	
NHNC	
	Belt
	OVERVIEW OF WORKS
To facilitate the generation connections in the area it is required to establish a new 132kV double busbar substation, indicatively named Harburn 132kV substation. The location of the SPT's new 400kV substation (which this 132kV double busbar site will connect into) is currently under review, with an initial view that it will tie into the existing XJ Route (STHA-TORN / WISH-SMEA/FALL) as well as facilitate a turn in of the XM Route (Kincardine-Currie circuit) following uprating as part of the HND process. The 400kV substation at Harburn is being constructed under SPT-RI-3002.	
Programme	Completion: - 2038
Progress	Current stage(s): Optioneering Next stage: Optioneering end date/ design and development start date



SPT-RI-3185 - KILW-HUNF-HUNE No.2 Cable Replacement
OVERVIEW OF WORKS
ontacted generation at Kilwinning 132/33kV substation has reached the level that will bacity of the existing 132kV no.2 cable circuit from KILW-HUNF-HUNE. It is proposed to ~3.2km of 132kV cable between KILW-HUNE to achieve a similar 220MVA rating per 3U Route.
Completion: - May 2028
Design:
Still to be commenced
Consenting:
Still to be commenced
Detailed Engineering:
Still to be commenced
Tendering:
Still to be commenced
Construction:
Still to be commenced
Commissioning/Close Out:
Still to be commenced
)



<u>V1.3</u>	SPT-RI-3189 - Clyde South to Whitelaw Brae 33kV Works
OVERVIEW OF WORKS Following further connection applications in this area it is required to establish a shared 33kV circuit from Clyde South substation to the Whitelaw Brae substation. These shared works are:	
 At Clyde South, install 0.05km 630mm2 Cu XPLE cable from the LV side of SGT1B to the new incomer circuit breaker within a 2-panel board at Clyde South. Install two 33kV indoor circuit breakers within a GIS container at Clyde South substation. Establish a 33kV circuit, incorporating approximately 13.65km of overhead line and underground cable, and associated auxiliary cable between Clyde South Substation and Whitelaw Brae substation. Installation of an SPT owned indoor 33kV incoming circuit breaker as part of the 33kV 3 Panel Board required at the Whitelaw Brae substation. All associated protection and control works. Provision of com 	
Programme	Completion: - July 2026
Progress	Design complete
	Consenting: Almost Complete
	Detailed Engineering: Design Complete
	Tendering: Omplete, except for BOP
	Construction: Still to commence: On Schedule
	Commissioning/Close Out: Still to commence: On Schedule



<u>V1.0</u>

SPT-RI-3191 - Arresgill 132/33kV Substation

OVERVIEW OF WORKS

The scope of this TORI shall consist of the installation of a new 400kV double busbar feeder bay and associated switchgear (circuit breaker and DBB disconnectors) and a 400/132kV 240MVA Super Grid Transformer at Wyseby Hill substation. From here a new 132kV circuit shall be installed out to the new collector substation called Arresgill 132/33kV substation.

Two new 132/33kV 120MVA Grid Transformers will be installed at Arresgill 132/33kV substation with associated 132kV circuit breakers (HV side of GT's) and 33kV indoor circuit breakers (LV side of GT's) at Arresgill substation. Establish two 33kV switchboards ('A' and 'B' board) at Arresgill substation, this shall provide a connection to two separate 33kV circuit breaker bays covered off under the appropriate connection offers.

Programme	Completion: - October 2031
Progress	 Design: Initial design work commenced
	Consenting: • Still to be commenced
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.2</u>	SPT-RI-3211 - NEIL BRAP-GOVA-HAGR LMS
OVERVIEW OF WORKS A Load Management Scheme (LMS) is required to manage connections in the Neilston – Paisley/Braehead Park, Neilston – Paisley/Govan/Haggs Road 132 kV group to prevent overloads on these circuits. Any overload will be removed by the LMS managing the appropriate non-firm connections via the SPD interface with the connection.	
Programme	Completion: - completion date under review
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



[
<u>V1.1</u>	SPT-RI-3223 - BT Route No.2 132kV Circuit Uprating
	OVERVIEW OF WORKS
In order to alleviate overloads on the 132kV circuit between the proposed tee location and Newton Stewart (on BT Route No.2 side) associated with embedded generation connections at Glenluce GSP, it is required to uprate the stretch of circuit. It is proposed to uprate the stretch of circuit with approximately 22km of 250mm2 AAAC (Sycamore), which will provide sufficient headroom to remove any intact overloads seen on the system.	
Programme	Completion: - Under review
Progress	Design:
	Under Review
	Consenting:
	Under Review
	Detailed Engineering:
	Under Review
	Tendering:
	Under Review
	Construction:
	Under Review
	Commissioning/Close Out:
	Under Review
l	



<u>V1.0</u>	SPT-RI-3232 - Bankhead 400kV Substation & 400kV OHL Works
OVERVIEW OF WORKS To facilitate the connection of this battery storage connection a new 400kV substation will be need to be created and looped into one side of the existing ZA 400kV OHL Route. The 400kV OHL works as well as the creation of this new substation will be established under SPT-RI-3232 which this connection shall be contingent upon.	
Programme	Completion: - Jun 2029
Progress	 Design: Still to be commenced Consenting: Still to be commenced Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



<u>V1.1</u>	SPT-RI-3239 - BU Route Tower Modifications
OVERVIEW OF WORKS In order to accommodate a generation connection in this area it is required to modify suspension tower BU014 on the existing BU Route. The completion of this work will provide a double tee connection into the existing BU Route.	
Programme	Completion: - October 2029
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.0</u>	SPT-RI-3263 - Erskine 132kV Bus Section Circuit Breaker	
OVERVIEW OF WORKS It is proposed to install a new 132kV bus section circuit breaker at Erskine 132kV substation to create a single switch arrangement. This is to secure Erskine GSP on the transmission system following the BRAP-ERSK No.1 circuit being removed from service.		
Programme	Completion: - July 2026	
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced	



<u>V1.4</u>	SPT-RI-3284 - Old Toll Collector	
OVERVIEW OF WORKS In order to accommodate connections in this area, it is proposed to establish a collector substation at the existing Ayr Farm substation.		
Programme	Completion: - May 2028	
Progress	 Design: Works in progress with design Consenting: Still to be commenced Detailed Engineering: Works in progress Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced 	



<u>V1.0</u>	SPT-RI-3303 - Tee into Newton Stewart-Glenluce 1(2) 132kV circuits	
OVERVIEW OF WORKS In order to facilitate the connection of embedded generation into Glenluce 132/33kV substation, it is required to establish a new B board at Glenluce GSP. This will allow two additional transformers to be installed by teeing into Newton Stewart – Glenluce 1 and 2 circuits respectively.		
Programme	Completion: - Under review	
Progress	Design: • Under review Consenting: • Under review Detailed Engineering: • Under review Tendering: • Under review Construction: • Under review Commissioning/Close Out: • Under review	



<u>V2.2</u>	SPT-RI-3320 - Braidfauld 275kV substation & YF013 Tee In
OVERVIEW OF WORKS In order to accommodate connections in this area, it is proposed to establish a collector substation at the existing Gresham House Dalmarnock BESS substation, to be named Braidfauld 275kV substation.	
Programme	Completion: - Under Review
Progress	Design: • Under Review Consenting: • Under Review Detailed Engineering: • Under Review Tendering: • Under Review Construction: • Under Review Commissioning/Close Out: • Under Review



<u>V1.3</u>	SPT-RI-3321 - Coalburn – Coalburn North 400kV interconnector
demand in Coalburn	OVERVIEW OF WORKS e connection of Shiel Hydrogen Plant (SPT-TOCO-3024) that represents 1400MW of North 400kV substation, it is proposed to install a new interconnector circuit between station and Coalburn North 400kV substation.
Programme	Completion: - October 2031
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.1</u>	SPT-RI-3334 - Thorntonloch 400kV Substation
OVERVIEW OF WORKS Due to continued connection applications in this area of SPT's system a new 400kV substation has been proposed to facilitate these. The new 400kV substation, indicatively named Thorntonloch, will connect into the Torness to Branxton 400kV cable circuit and will be a 400kV Gas Insulated Switchgear (GIS) substation owing to the number of bays required. At the moment SPT is looking to establish a 23-bay substation arrangement which is outlined in Section 1.3.	
Programme	Completion: - October 2031
Progress	Design: • Still to be commenced Consenting: • Still to be commenced • Still to be commenced • Still to be commenced Tendering: • Still to be commenced • Still to be commenced • Still to be commenced Construction: • Still to be commenced • Still to be commenced • Still to be commenced Construction: • Still to be commenced • Still to be commenced • Still to be commenced



<u>V1.0</u>	SPT-RI-3337 - AB Route 132kV Load Management Scheme
OVERVIEW OF WORKS A Load Management Scheme (LMS) is required at Devonside 132/33kV substation to monitor loadings on the AB Route for the following circuits: • Devonside – Denny North 132kV circuit (No.1) • Devonside – Denny North 132kV circuit (No.2)	
Programme	Completion: - April 2030
Progress	 Design: Still to be commenced Consenting: Still to be commenced Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



<u>V1.1</u>	SPT-RI-3345 - Torness-Innerwick-Dunbar 132kV Cable Replacement
	OVERVIEW OF WORKS
I Inder this scheme it	is required to replace the two sections of cable on this circuit (Torness to Innerwick and

Under this scheme it is required to replace the two sections of cable on this circuit (Torness to Innerwick and Innerwick to Dunbar) with new 800mm2 AL XLPE. To ensure no thermal dependency is created, like the existing circuits, this double circuit should be laid is separate trenches or at least a sufficient distance apart in the same trench that no thermal interaction is created.

The capacity of these cables at the moment only needs to be in line with the OHL which is 108MVA however a rating of circa 150MVA should be sought.

Programme	Completion: - March 2028
Progress	 Design: Early-stage design has commenced
	Consenting: • Initial discussions initiated
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.1</u>

SPT-RI-3356 - Braehead Park GSP GT1(2) LMS

OVERVIEW OF WORKS

It is proposed to install a Load Management Scheme (LMS) at Braehead Park GSP to continually monitor the loading of the GT1 and GT2 GSP transformers.

In order to prevent unacceptable overloading of any primary transmission equipment, a trip signal shall be issued to SP Distribution (SPD) for the relevant embedded generation connection, as required, when the site is in export mode, import mode or both export and import mode of operation and detailed in the respective contract.

It is expected that the loading of an in-service transformer will only exceed its continuous 90MVA – Works part of the Neilston group of projects

Programme	Completion: - June 2028
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.1</u>

SPT-RI-3357 - Braehead Park GSP Loss of Mains

OVERVIEW OF WORKS

There is a requirement to install a Loss of Mains intertrip scheme at Braehead Park GSP to mitigate any risk of the SPD system becoming islanded. The intertrip scheme will interface with the following circuit breakers at Braehead Park and monitor their position:

- Grid 1 CB
- Grid 2 CB

For the opening of Grid 1 and Grid 2 circuit breakers, a trip signal shall be issued to SPD to trip the appropriate embedded generation. Included in the Neilston group of projects

Programme	Completion: - July 2028
Progress	Design: Still to be commenced
	Consenting: Still to be commenced
	Detailed Engineering: Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.5</u>

SPT-RI-3383 - Armadale 400kV Substation

OVERVIEW OF WORKS

It is proposed to establish a new 400kV substation, indicatively named Armadale substation, which would connect into XM Route and has been triggered given generation applications in this area.

Originally the scope of Armadale substation was to connect into the 275kV side of XM Route however further system studies have noted that Armadale substation needs to connect into the side of the line that will be uprated to 400kV meaning that this TORI is now dependent on **SPT-RI-2084**.

Previously **SPT-RI-3383** had noted the establishing of a 132kV double busbar substation at the Armadale location also however the 132kV works have now been split out into a separate TORI for contractual reasons.

Programme	Completion: - October 2031
Progress	Design:Still to be commenced
	Consenting:Still to be commenced
	Detailed Engineering: • Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: • Still to be commenced



<u>V1.2</u>

SPT-RI-3386 - YF Route OHL Reconductor

OVERVIEW OF WORKS

As part of RIIO-T3 asset modernisation a number of assets across the transmission network have been identified for replacement. This TORI captures the asset modernisation work that is scheduled to be carried out on the 275kV OHL YF Route which runs between DALM-CLYM at ~4.2km. The OHL circuit will be reconductored to achieve a minimum of 1130MVA per circuit (Reconductor with 2 x 425mm2 'Totara' AAAC @ 90°C).

Programme	Completion: - October 2032
Progress	Design: • TBC
	Consenting: • TBC
	Detailed Engineering: • TBC
	Tendering: • TBC
	Construction: • TBC
	Commissioning/Close Out: • TBC



<u>V1.2</u>	SPT-RI-3406 Blacklaw 400kV Collector Substation
	OVERVIEW OF WORKS
The collector sub	ew 400kV collector substation, fed from Wishaw 400kV substation via a single 400kV circuit. ostation is to be named Blacklaw 400kV collector substation. The project involves establishing at Wishaw 400kV GIS substation, installing approx. 300m of 400kV UGC to the Blacklaw site.
Programme	Completion: - October 2030
Progress	Design:
-	In progress
	Consenting:
	Still to commence
	Detailed Engineering:
	Still to commence
	Tendering:
	Still to commence
	Construction:
	Still to commence
	Commissioning/Close Out:
	Commissioning/Close Out:



<u>V2.0</u>	SPT-RI-3434 - Bloch Collector Substation
OVERVIEW OF WORKS Given the number of generation applications in this area and the arrangement at Wyseby Hill, it is proposed to establish a new shared collector substation. It is proposed to install a new 400kV double busbar bay and 400/132kV 240MVA transformer at Wyseby Hill 400kV substation planned to be constructed as part of SPT- RI-2320. From here approx. 9km of 132kV circuit shall be constructed to the Bloch collector substation. At Bloch collector substation, install a single 132kV busbar with a 132kv disconnector.	
Programme	Completion: - October 2031
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.0</u>	SPT-RI-3452 - Mark Hill North - New Cumnock North 400kV Circuit
OVERVIEW OF WORKS To alleviate the thermal overloading associated with YY route, it is proposed to reinforce the South West Scotland network by creating 400kV power corridors between New Cumnock and the proposed South Ayrshire HVDC Converter station. As part of these works, a new 400kV double circuit will be established between the Mark Hill North 400kV substation (developed under SPT-RI-3461) and New Cumnock North 400kV substation (developed under SPT-RI-3309).	
Programme	Completion: - October 2036
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



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SPT-RI-3461 - Mark Hill North 400/275kV Substation

OVERVIEW OF WORKS

To alleviate the thermal overloading associated with YY route, it is proposed to reinforce the South West Scotland network by creating 400kV power corridors between New Cumnock and the proposed South Ayrshire HVDC Converter station. As part of these works, a new 400/275kV substation will be established within the vicinity of the existing Mark Hill 275kV substation. The new Mark Hill North Substation shall comprise of a 400kV double busbar substation as well as a new 275kV double busbar substation, these will be connected via three 400/275kV Supergrid Transformers.

Programme	Completion: - October 2036
Progress	Design: Still to be commenced
	Consenting:Still to be commenced
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.0</u>	<u> SPT-RI-3463 - Mark Hill North – South Ayrshire HVDC Bussing</u>
<u>v1.0</u>	Station
	OVERVIEW OF WORKS
It is proposed to establish a new HVDC Converter station at the proposed South Ayrshire HVDC Bussing Station established under SPT-RI-3176 Kilmarnock South – West Coast HVDC Bussing Station. This new converter station will provide an interface between the SPT South-West Ayrshire network and the West Coast HVDC link proposed under HNDFUE. A new 400kV power corridor will be established between the new HVDC converter station and the proposed Mark Hill North substation established under SPT-RI-3461 Mark Hill North 400/275kV substation.	
Programme	Completion: - October 2036
Progress	Design:
-	Still to be commenced
	Consenting:
	Still to be commenced
	Detailed Engineering:
	Still to be commenced
	Tendering:
	Still to be commenced
Construction:	
	Still to be commenced
	Commissioning/Close Out:
	Still to be commenced



<u>V1.5</u>	SPT-RI-3471 - New Dalkeith 400kV GIS Substation	
OVERVIEW OF WORKS Creation of a new Dalkeith 400kV GIS substation is proposed to be established on SPT owned land ~0.5km East of Smeaton substation under SPT-RI-3471. The new Dalkeith 400kV GIS substation is proposed to connect through the turn in of both ZS route circuits and at the moment is notionally a 12 bay 400kV GIS substation with the following bays: • 4 x DBB feeder bays for connection into ZS route circuits • 2 x bus section circuit breakers • 2 x bus couplers • 5 x DBB feeder bays for future connections (As a minimum)		
Programme	Completion: - October 2031	
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced	



<u>V1.2</u>	SPT-RI-3485 - Hunterston East to Hunterston PARC Tee 400kV		
<u>V1.2</u>	Switchgear and OHL Works		
	OVERVIEW OF WORKS		
To accommodate the connection of Hunterston PARC BESS and Hunterston Hydrogen into Hunterston East			
400kV substation, it is proposed to install a new 400kV DBB GIS switchgear and associated 400kV equipment			
	00kV GIS substation. From here ~0.3km of 400kV cable shall be installed to the CSE of 400kV OHL circuit shall be installed to the Hunterston PARC tee location between		
	Keppen Burn substations. These assets will be shared by Hunterston PARC BESS,		
	n and Elmya Hunterston connections.		
D			
Programme	Completion: - October 2030		
Progress	Design:		
	Still to be commenced		
	Consenting:		
	Still to be commenced		
	Detailed Engineering:		
	Still to be commenced		
	Tendering: Still to be commenced		
	Still to be commenced		
	Construction:		
	Still to be commenced		
	Commissioning/Close Out:		
	Still to be commenced		



<u>V1.0</u>	SPT-RI-3488 - Currie SGT3 DCB Installation
	OVERVIEW OF WORKS Il security and to accommodate a new generation and demand connection within the etwork, there is a requirement to replace the H23 disconnector at Currie 275/132kV B.
Programme	Completion: - Has not been contracted – cannot associate with other works
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.2</u>	SPT-RI-3489 - Giffordland 400/132kV DBB Substation and OHL
	Works
	OVERVIEW OF WORKS

Creation of a new 132/44kV substation around the Giffordland area is proposed to be established on a new portion of land under **SPT-RI-3489**.

The new 132/400kV substation is proposed to connect through the turn in of CE route circuits and at the moment is notionally a 8 bay 132/400kV substation with the following bays:

- 2 x DBB feeder bays for connection into CE route circuits
- 2 x DBB feeder bay for 2 x 360MVA SGTs and new 400kV route Tee into XB Route
- 1 x bus section circuit breakers
- 1 x bus couplers
- 2 x DBB feeder bays for future connections (As a minimum)

Programme	Completion: - October 2031
Progress	Design: Still to be commenced Consenting:
	 Still to be commenced Detailed Engineering: Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.0</u>

SPT-RI-3497 - Newarthill GSP Loss of Mains

OVERVIEW OF WORKS

There is a requirement to install a Loss of Mains intertrip scheme at Newarthill GSP to mitigate any risk of the SPD system becoming islanded. The intertrip scheme will interface with the following circuit breakers at Newarthill and monitor their position:

- Supergrid 1 SG1 CB
- Supergrid 2 SG2 CB

For the opening of Supergrid 1 and Supergrid 2 circuit breakers, a trip signal shall be issued to SPD to trip the appropriate embedded generation.

Programme	Completion: - October 2026
Progress	 Design: Has been initiated
	Consenting: • Not required
	Detailed Engineering: Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced



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<u>V1.0</u>
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<u>SPT-RI-3498 - Glenmuckloch 400kV - Dumfries North 400kV</u>

OVERVIEW OF WORKS

Under the NOA7 Refresh the need was identified to develop a new west coast onshore high-capacity corridor over the B6 boundary between Scotland and England to increase the transfer capability across this transmission boundary. This project is driven by the continued increase in required transfers seen across this boundary due to the need to connect renewable generation in Scotland to achieve UK and Government's net zero target by 2050 and 2045 respectively.

To facilitate generation applications in this area it is proposed to utilise this new west coast onshore corridor. The TORI shall construct a new 400kV double circuit between the proposed Glenmuckloch 400kV substation (established under **SPT-RI-236**) and the proposed Dumfries North 400kV substation (established under **SPT-RI-2862**). It is proposed to string both sides of the 400kV corridor with 3x700mm2 Araucaria AAAC conductor provisionally rated at 750C with the capability to uprate the operating temperature to 90C.

Programme	Completion: - October 2036
Progress	Design: • Still to be commenced
	Consenting: • Still to be commenced
	Detailed Engineering: Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V2.1</u>	SPT-RI-3533 - Maybole to Craiginmoddie Tee 132kV OHL
	OVERVIEW OF WORKS
To co-ordinate the connection of new wind farms located near the town of Maybole in the South West of Scotland it is proposed to establish a shared 132kV overhead line between Maybole 132kV substation and to a "Craiginmoddie Tee" location, approximately 5km south of Maybole 132kV substation. The installation of a new 132kV feeder bay at Maybole 132kV is required to facilitate the OHL connection.	
Programme	Completion: - October 2032
Progress	Design:
-	Still to commence
	O successful and
	Consenting: Still to commence
	Detailed Engineering:
	Still to commence
	Tendering:
	Still to commence
	Construction:
	Still to commence
	Commissioning/Close Out:
	Still to commence
L	



<u>V1.1</u>

SPT-RI-3534 - Braehead Park Switchgear and YB Route Works

OVERVIEW OF WORKS

As part of a group of reinforcements to accommodate new generation and battery storage connections in the Neilston/Devol Moor 132kV group it is proposed to reconfigure the 132kV circuits around Govan and Braehead Park such that Govan (and Haggs Road) are fed radially from Braehead Park.

The reconfiguration ensures that Braehead Park and Erskine remain secure for loss of either circuit of the YB route. The works will also balance the load from Braehead Park, Govan and Haggs Road on the OHL circuits to the YB route circuits back to Neilston 132kV.

The works will also include uprating of the 132kV cable circuits between Braehead Park and Govan.

Completion: - October 2031
Design:Still to be commenced
Consenting: • Still to be commenced
Detailed Engineering:Still to be commenced
Tendering:Still to be commenced
Construction: Still to be commenced
Commissioning/Close Out: • Still to be commenced



<u>V1.1</u>	SPT-RI-3535 - Loch Gelly Collector Substation	
OVERVIEW OF WORKS In order to accommodate the connections of Mossmorran Storage BESS and Gresham House Mossmorran BESS near Mossmorran 400kV substation, it is proposed to establish a collector substation via an extension of the Mossmorran 400kV site. To note that the proposed collector substation was previously named Gresham House MOSM BESS Collector Substation but was updated to Loch Gelly Collector Substation in this TORI version.		
Programme	Completion: - October 2031	
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced	



V1.1	SPT-RI-3536 - Dalmarnock 275/132kV SGT Load Management
<u>v1.1</u>	<u>Scheme</u>
	OVERVIEW OF WORKS
overload conditions of	Scheme (LMS) is required at Dalmarnock 275/132kV substation in order to prevent on the single supergrid transformer when the other transformer is out of service. The oved by the LMS tripping the appropriate non-firm connections.
	e measurement is required on the LV side of each transformer so the direction, as well as ower flow through the transformer can be determined.
Programme	Completion: - Completion date under review
Progress	Design:Still to be commenced
	Consenting: Still to be commenced
Detailed Engineering:	
	Still to be commenced
Tendering:	
	Still to be commenced
Construction:	
	Still to be commenced
	Commissioning/Close Out: • Still to be commenced



<u>V1.0</u>	SPT-RI-3540 - Beattock 400/132kV Substation	
OVERVIEW OF WORKS The works here shall create a new 400/132kV substation notionally named Beattock substation. This substation shall connect into the existing Elvanfoot to Moffat 400kV circuit and will create a new 400kV double busbar substation connecting into two 400/132kV SGTs. On the 132kV side two transformer circuit breakers will be installed alongside a 132kV bus section to establish a 132kV busbar here.		
Programme	Completion: - October 2031	
Progress	Design: • To be commenced Consenting: • To be commenced Detailed Engineering: • To be commenced Tendering: • To be commenced Construction: • To be commenced Commissioning/Close Out: • To be commenced	



<u>V1.0</u>

SPT-RI-3544 - Killermont GSP GT1(2) LMS

OVERVIEW OF WORKS

It is proposed to install a Load Management Scheme (LMS) at Killermont GSP to continually monitor the loading of the GT1 and GT2 GSP transformers. In order to prevent unacceptable overloading of any primary transmission equipment, a trip signal shall be issued to SP Distribution (SPD) for the Embedded connection, as required, when the site is in both import and export mode.

It is expected that the loading of an in-service transformer will only exceed its continuous 90MVA nameplate rating during a Planned Outage, Unplanned Outage or Fault Outage on the adjacent circuit.

A current and voltage measurement is required on each of the GT1 and GT2 transformer so the direction, as well as magnitude, of the power flow through the transformer can be determined.

This SPT LMS will be required to transfer the following signals to SP Distribution (SPD) as the Distribution Network Operator (DNO):

- A Stage 1 Signal at 95% of the transformer rating
- A Stage 2 Signal at 100% of the transformer rating
- A Stage 3 Signal at 120% of the transformer rating

The values above may be subject to change following detailed design, User input and optimisation of the system.

Programme	Completion: - June 2031
Progress	Design: Still to be commenced
	Consenting:
	Still to be commenced
	Detailed Engineering: Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out:
	Still to be commenced



V 1.1	-

SPT-RI-3547 - Redshaw 132kV to Glentaggart / Hare Craig

OVERVIEW OF WORKS

It is proposed to connect Glentaggart 42MW BESS and Hare Craig WF into Redshaw 132kV GIS substation ('A' board) via a shared solution. The shared assets proposed for this solution are covered under this TORI, which entail the following works:

- Installation of a new 132kV double busbar bay and associated circuit breaker at Redshaw 132kV GIS ('A' board).
- Installation of a new 132/33kV 120MVA GT unit at Redshaw 132kV GIS ('A' board).
- Installation of a 33kV circuit breaker associated with the 3 panel switchboard.

Programme	Completion: - October 2027
Progress	Design: Still to be commenced
	Consenting:Still to be commenced
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: • Still to be commenced



<u>V1.0</u>

SPT-RI-3552 - Newarthill GSP GT1(2) LMS

OVERVIEW OF WORKS

It is proposed to install a Load Management Scheme (LMS) at Newarthill GSP to continually monitor the loading of the SGT1 and SGT2 GSP transformers. In order to prevent unacceptable overloading of any primary transmission equipment, a trip signal shall be issued to SP Distribution (SPD) for the Embedded connection, as required, when the site is in import and/or export mode.

It is expected that the loading of an in-service transformer will only exceed its continuous 60MVA nameplate rating during a Planned Outage, Unplanned Outage or Fault Outage on the adjacent circuit.

A current and voltage measurement is required on each of the SGT1 and SGT2 transformer so the direction, as well as magnitude, of the power flow through the transformer can be determined.

This SPT LMS will be required to transfer the following signals to SP Distribution (SPD) as the Distribution Network Operator (DNO):

- A Stage 1 Signal at 95% of the transformer rating
- A Stage 2 Signal at 100% of the transformer rating
- A Stage 3 Signal at 120% of the transformer rating

The values above may be subject to change following detailed design, User input and optimisation of the system.

Programme	Completion: - October 2026
Programme Progress	Completion: - October 2026 Design: • High level design completed Consenting: • Not required Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V2.2</u>	SPT-RI-3557 - Strathaven 275kV Substation Extension	
OVERVIEW OF WORKS To co-ordinate the connection of new battery storage connections near Strathaven substation it is proposed to establish a new 275kV double busbar bay at Strathaven 275kV substation. To facilitate this new bay an extension is required to the substation platform/compound.		
Programme	Completion: - October 2029	
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced	



<u>V2.0</u>	SPT-RI-3558 - Smyrton 275/132kV Substation	
OVERVIEW OF WORKS To accommodate generation into Auchencrosh 275kV substation, it is proposed to establish a collector substation named Smyrton 275/132kV Substation (previously named L48 Glen App Collector substation). At Auchencrosh substation, install a 275kV feeder bay. From there, install approximately 0.5km of 275kV UGC to Smyrton substation. At the Smyrton substation, install a 275kV single busbar with one 275kV feeder bay.		
Programme	Completion: - October 2028	
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced	



<u>V1.0</u>

SPT-RI-3559 - COYL-CARR-MAHI Intertrip Scheme

OVERVIEW OF WORKS

IED's will be installed at the Coylton 275kV substation, Carrick 275kV substation and Mark Hill 275kV substation to monitor the status of the 275kV circuit breakers installed along YY Route. Should any of the relevant circuit breakers detailed in the below table open, a trip signal will be sent to relevant generators.

Operating Condition	Mitigating Action
Circuit Breaker L15 at Mark Hill 275kV open	Disconnect appropriate Generators
Circuit Breaker L25 at Carrick 275kV open	Disconnect appropriate Generators
Circuit Breaker L35 at Carrick 275kV open	Disconnect appropriate Generators
Circuit Breaker L65 at Coylton 275kV	Disconnect appropriate Generators

Programme	Completion: - October 2036
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Output:
	Still to be commenced



<u>V1.0</u>

SPT-RI-3560 - COYL-CARR-MAHI-AUCC LMS Scheme

OVERVIEW OF WORKS

IED's will be installed at the Carrick 275kV substation and Auchencrosh 275kV substation to monitor the circuit loading along YY Route. Should any of the relevant YY Route circuit sections detailed in the below table be overlaoded, a trip signal will be sent to relevant generators.

Overload Condition	Mitigating Action
Auchencrosh – Mark Hill Circuit Overload	Disconnect appropriate Generators
Mark Hill – Carrick Circuit Overload	Disconnect appropriate Generators
Carrick – Coylton Circuit Overload	Disconnect appropriate Generators



<u>V1.0</u>	SPT-RI-3565 - Devol Moor – Auchentiber 400kV OHL and substation works	
OVERVIEW OF WORKS To accommodate new generation connection at Devol Moor 400kV substation, a shared solution has been identified following offers acceptance. This will establish a new 400kV double busbar GIS bay at the proposed Devol Moor 400kV substation, with the installation of approx. 1.5km of 400kV overhead line to the new collector substation, where a 400kV CB, associated disconnectors and a 400kV busbar will be installed.		
Programme	Completion: - October 2029	
Progress	Design: In progress Consenting: In progress Detailed Engineering: Still to commence Tendering: Still to commence Construction: Still to commence Commissioning/Close Out: Still to commence	



<u>V1.0</u>	SPT-RI-3569 - Lessnessock Collector Substation	
OVERVIEW OF WORKS In order to accommodate the connection of Killoch BESS (SPT-RI-2577), it is proposed that a new collector substation be established at Lessnessock Solar Farm (SPT-RI-2567), that connects to Colyton 275kV Substation via approx. 3km of 275kV OHL circuit.		
Programme	Completion: - September 2030	
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC	



<u>V1.5</u>	SPT-RI-3615 - Gartclash Collector Substation	
OVERVIEW OF WORKS It is proposed to establish a collector substation at the Gartclash Farm BESS site to accommodate generation through shared solutions in the Denny North 275kV area. At the Gartclash Collector substation, a 275kV single busbar shall be installed along with a 275kV feeder bay. From there, install approximately 1.98km of 275kV circuit to Denny North 275kV substation where a double busbar bay shall be installed.		
Programme	Completion: - October 2028	
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced	



<u>V1.0</u>	SPT-RI-3633 – Barnhill 275kV DBB Substation and OHL Works	
OVERVIEW OF WORKS A new 275kV double busbar substation is proposed to be established along the 275kV XF Route (Windyhill – Neilston 275kV) to accommodate the connection of TH Renfrewshire 250MW. It is proposed to turn in the 275kV XF route into the new Barnhill substation with new L8 towers required as well as a stretch of new OHL circuits. The proposed turn in OHL circuits are to be matched with the existing conductor currently installed along XF route (Twin TOTARA).		
Programme	Completion: - October 2030	
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced	



<u>V1.0</u>	SPT-RI-3644 - Gala North SGT3
OVERVIEW OF WORKS Following connection applications into the Gala North area it is required to install a third 400/132kV supergrid transformer at the Gala North 400/132kV substation. This will require the associated 400kV double busbar bay into the Gala North 400kV substation and will establish a 132kV busbar for the triggering connections into this substation.	
Programme	Completion: - October 2029
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC



	SPT-RI-3657 - Craigenputtlock 400/132kV Collector Substation &
<u>V1.4</u>	OHL
	OVERVIEW OF WORKS
400kV AIS substat	modate the connections within the South-West Scotland region, it is proposed to establish a cion and 132Kv GIS substation proposed to be split between an A and B board within the rea (near Glenlee) that shall be connected to Dumfries North 400kV.
Programme	Completion: - Under Rview
Progress	Design: • Still to be commenced
	Consenting:Still to be commenced
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: • Still to be commenced



<u>V1.1</u>

SPT-RI-3660 - Eccles 132kV Fault Level Mitigation

OVERVIEW OF WORKS

To facilitate new battery and generation connections within the future Eccles/Gala North 132kV group the short circuit rating of Eccles 132kV is required to increase from the existing 3-phase design standard of 20kA RMS/50kA peak to no less than 25kA RMS/62.5kA peak. The peak break of all 132kV switchgear should be rated no less than 46.36kA

This will include the assessment and uprating where necessary of all equipment and structures to withstand the required fault current.

Programme	Completion: - July 2030
Progress	Design:
	In progress
	Consenting:
	In progress
	Detailed Engineering:
	In progress
	Tendering:
	In progress
	Construction:
	In progress
	Commissioning/Close Out:
	In progress



<u>V2.0</u>

SPT-RI-3661 - Grange Burn 275kV Substation

OVERVIEW OF WORKS

To accommodate connections in the Grangemouth area it is required to establish a new 275kV substation, indicatively named Grange Burn 275kV substation, that will provide connectivity options for local connections as well as tie into the surrounding overhead line circuits.

The scope of works shall include turn ins of the existing XN and XK overhead line circuits as well as the creation of a new 275kV double busbar Gas Insulated Switchgear (GIS) substation that will also feature a 400/275kV supergrid transformer (SGT) given that one circuit shall be operated at 400kV in future.

Completion: - June 2031
Design: Still to commence
Consenting: Still to commence
Detailed Engineering: Still to commence
Tendering:Still to commence
Construction: Still to commence
Commissioning/Close Out: Still to commence



<u>V1.2</u>	SPT-RI-3664 - Bearsden 275kV Collector	
OVERVIEW OF WORKS It is proposed to establish a collector substation in the Windyhill 275kV area to efficiently accommodate connections applications. It is proposed to establish the indicatively called 'Bearsden 275kV Collector' substation. At the collector substation, install a 275kV single busbar with one 275kV feeder bay with the associated switchgear. From there, install approx. 1.2km of 275kV cable circuit to Windyhill 275kV substation where a double busbar bay with the associated switchgear shall be installed.		
Programme	Completion: - October 2029	
Progress	Design: • Still to be commenced Consenting: • Still to be commenced • Still to be commenced • Still to be commenced Tendering: • Still to be commenced • Still to be commenced • Still to be commenced Construction: • Still to be commenced • Still to be commenced • Still to be commenced Construction: • Still to be commenced • Still to be commenced • Still to be commenced	



<u>V1.1</u>	SPT-RI-3668 - Hunterston 400/132kV SGT LMS Scheme
OVERVIEW OF WORKS A Load Management Scheme (LMS) is required at Hunterston 400/132kV SGT LMS Scheme in order to prevent overload conditions on the single supergrid transformer when the other transformer is out of service. The overload will be removed by the LMS tripping the appropriate non-firm connections.	
Programme	Completion: - August 2028
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.1</u>	SPT-RI-3718 - Torness-Innerwick Dunbar 132kV OHL Replacement
OVERVIEW OF WORKS Torness-Innerwick Dunbar 132kV OHL Replacement. Under this scheme it is proposed to replace the 132kV OHL circuits (Torness-Innerwick to Dunbar) with new 132kV Sycamore conductor with rating of 157MVA.	
Programme	Completion: - October 2028
Progress	Design: • TBC Consenting: • TBC Detailed Engineering: • TBC Tendering: • TBC Construction: • TBC Commissioning/Close Out: • TBC



<u>V1.0</u>	SPT-RI-3720 - Lambloch 275kV Collector Substation	
OVERVIEW OF WORKS It is proposed to establish a collector substation at the Lambloch BESS site to accommodate generation through a shared solution in the Lambhill 275kV area. At the Lambloch Collector substation, a 275kV single busbar shall be installed along with a 275kV feeder bay. From there, install approximately 0.9km of 275kV circuit to Lambhill 275kV substation where a double busbar bay shall be installed.		
Programme	Completion: - May 2029 – Aligned with TOCO-3137	
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced	



<u>V1.3</u>

SPT TORI Quarterly Report Q2 2025

SPT-RI-3727 - Morningside 400kV Substation

 Construction of a new 400kV substation is proposed to be established near of the village of Morningside (approx. 6km east of Wishaw) under SPT-RI-3727. The Morningside 400kV substation is proposed to connect through the turn in of both XJ route circuits and the new XR route 400kV circuit. At present the substation is planned on the basis of a 15 bay 400kV substation with the following bays: 6 x DBB feeder bays for connection into XJ double circuit and XR single circuit. 2 x bus section circuit breakers 2 x bus couplers 4 x DBB feeder bays for future connections (As a minimum) Note that 1 additional bay has been offered for a new generation connection. 	
Programme	Completion: - October 2033
Progress	 Design: Still to be commenced
	Consenting: Still to be commenced
	Detailed Engineering:
	Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced

OVERVIEW OF WORKS



<u>V1.1</u>

SPT-RI-3729 - East Kilbride B GSP SGT LMS

East Kilbride B GSP Load Management Scheme

It is required to install a Load Management Scheme (LMS) at East Kilbride B GSP to continually monitor the loading of the SGT1B and SGT2B GSP transformers. In order to prevent unacceptable overloading of any primary transmission equipment, a trip signal shall be issued to SP Distribution (SPD) for any embedded connection as required, when the site is in both import and export mode.

OVERVIEW OF WORKS

East Kilbride B GSP Loss of Mains Intertrip

There is a requirement to install a Loss of Mains intertrip scheme at East Kilbride B GSP to mitigate any risk of the SPD system becoming islanded. The intertrip scheme will interface with the following circuit breakers at East Kilbride B GSP and monitor their position:

- SuperGrid 1B (SG1B) CB
- SuperGrid 2B (SG2B) CB

For the opening of SG1B and SG2B circuit breakers, a trip signal shall be issued to SPD to trip the appropriate embedded generation.

Programme	Completion: - October 2033
Progress	Design:Still to be commenced
	Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced Commissioning/Close Out:
	Still to be commenced



which will be teed off As part of the new co required as the existi	ing control building does not have sufficient space to accommodate the P&C panels and
which will be teed off As part of the new co required as the existi	ons out of Newarthill substation a new 275kV circuit breaker bay needs to be installed f the existing 275kV busbars. onnections being made into Newarthill substation a new substation control building is ing control building does not have sufficient space to accommodate the P&C panels and
required as the existi	ing control building does not have sufficient space to accommodate the P&C panels and
As part of the new connections being made into Newarthill substation a new substation control building is required as the existing control building does not have sufficient space to accommodate the P&C panels and other associated equipment within it. Additional space for the works at Newarthill and a new control building has been provided as part of SPT-RI-3739 .	
Programme	Completion: - Under review
Progress	Design: • Under review Consenting:
	Under review
	 Detailed Engineering: Under review
	Tendering:Under review
	Construction: • Under review
	Commissioning/Close Out: • Under review



<u>V1.3</u>	SPT-RI-3736 - Coldstream 132kV Collector Substation
OVERVIEW OF WORKS A new 132kV collector substation is proposed to accommodate new generator and BESS connections near Eccles substation. The indicatively named Coldstream 132kV Collector Substation is proposed to be established near the existing Eccles 132kV substation to provide a shared connection solution for several connections within the area.	
Programme	Completion: - July 2030
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.6</u>	SPT-RI-3739 - Newarthill Substation Platform Extension and New Control Building

As part of the new connections being made into Newarthill substation a new substation control building is required as the existing control building does not have sufficient space to accommodate the P&C panels and other associated equipment within it. The establishing of the new control building and sufficient substation platform space is covered off under the scope of this TORI.

The works under this TORI shall extend the existing Newarthill substation platform and this TORI's appropriate share of the substation platform. Establish a new control building at Newarthill and this TORI's appropriate share of new control building as well as the appropriate share of cost to move the existing equipment in NEAR control building into new building.

Completion: - October 2028
 Design: Still to be commenced
Consenting: • Still to be commenced
Detailed Engineering:Still to be commenced
Tendering:Still to be commenced
Construction: • Still to be commenced
Commissioning/Close Out: • Still to be commenced



<u>V2.0</u>

SPT-RI-3830 - COYL-MAYB 132kV Load Management Scheme

OVERVIEW OF WORKS

A Load Management Scheme (LMS) is required at Coylton 132kV to continually monitor the loading though:

- Coylton Maybole 132kV No.1 circuit
- Coylton Maybole 132kV No.2 circuit

It is proposed to install a LMS at Coylton 132kV to continually monitor the loading of the established Coylton-Maybole 132kV circuits. In order to prevent unacceptable overloading of any primary transmission equipment, a trip signal shall be issued to applicable generators as required when sites are in export mode, import mode or both import and export mode of operation.

It is expected that the loading of an in-service circuit will only exceed its continuous rating during a planned outage, unplanned outage or fault outage on the adjacent circuit.

A current and voltage measurement is required on each of the Coylton – Maybole 132kV circuit so that direction and magnitude of power flow for each circuit can be determined.

The load management scheme shall be required to transfer the following signals:

- A Stage 1 signal at 95% of the circuit rating
- A Stage 2 signal at 100% of the circuit rating
- A Stage 3 signal at 120% of the circuit rating

The values above may be subject to change following detailed engineering design, user input and optimisation of the system.

Programme	Completion: - October 2032
Progress	Design:Still to be commenced
	Consenting: • Still to be commenced
	Detailed Engineering: Still to be commenced
	Tendering: • Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.0</u>	SPT-RI-3847 - Whitburn 400kV Substation
OVERVIEW OF WORKS It is proposed to establish a new substation indicatively called Whitburn 400kV substation to facilitate new connections in Harburn 400kv substation (established under SPT-RI-3002). A new double busbar bay with the associated switchgear shall be installed at Harburn 400kV substation. Between Harburn and Whitburn 400kV substation a new L12 400kV OHL will be installed. At Whitburn 400kV substation establish a 400kV DBB feeder bay and one 400kV bus coupler (allowance to be planned for future connections)	
Programme	Completion: - October 2031
Progress	Design: • Still to commence Consenting: • Still to commence Detailed Engineering: • Still to commence Tendering: • Still to commence Construction: • Still to commence Commissioning/Close Out: • Still to commence



<u>V1.0</u>

SPT-RI-3906 - Linnmill GSP Loss of Mains

OVERVIEW OF WORKS

There is a requirement to install a Loss of Mains intertrip scheme at Linnmill GSP to mitigate any risk of the SPD system becoming islanded. The intertrip scheme will interface with the following circuit breakers at Linnmill and monitor their position:

- Grid 1 CB
- Grid 2 CB

For the opening of Grid 1 and Grid 2 circuit breakers, a trip signal shall be issued to SPD to trip the appropriate embedded generation.

Programme	Completion: - August 2032
Progress	Design:Still to be commenced
	Consenting:Still to be commenced
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: • Still to be commenced



<u>V1.0</u>

SPT-RI-3945 - St Andrews Cross GSP GT1(2) LMS

OVERVIEW OF WORKS

It is proposed to install a Load Management Scheme (LMS) at St Andrews Cross GSP to continually monitor the loading of the GT1 and GT2 GSP transformers. In order to prevent unacceptable overloading of any primary transmission equipment, a trip signal shall be issued to SP Distribution (SPD) for the Embedded connection, as required.

It is expected that the loading of an in-service transformer will only exceed its continuous 60MVA nameplate rating during a Planned Outage, Unplanned Outage or Fault Outage on the adjacent circuit.

A current and voltage measurement is required on each of the GT1 and GT2 transformer so the direction, as well as magnitude, of the power flow through the transformer can be determined.

Programme	Completion: - July 2027
Progress	Design: • Commenced
	Consenting: • Not Required
	Detailed Engineering:Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out: Still to be commenced



V1.0

SPT-RI-3946 - St Andrews Cross GSP Loss of Mains

OVERVIEW OF WORKS

There is a requirement to install a Loss of Mains intertrip scheme at St Andrews Cross GSP to mitigate any risk of the SPD system becoming islanded. The intertrip scheme will interface with the following circuit breakers at St Andrews Cross and monitor their position:

- Grid 1 CB
- Grid 2 CB

For the opening of Grid 1 and Grid 2 circuit breakers, a trip signal shall be issued to SPD to trip the appropriate embedded generation.

Programme	Completion: - July 2027
Progress	Design: • Commenced
	Consenting: • Not Required
	Detailed Engineering: • Still to be commenced
	Tendering:Still to be commenced
	Construction: • Still to be commenced
	Commissioning/Close Out: Still to be commenced



<u>V1.1</u>	SPT-RI-3962 - CI Ruute 132kV Tower
OVERVIEW OF WORKS The scope of this project is to install a new 132kV tower on CI Route to facilitate two new cable circuits teeing into this overhead line route. The new tower should be capable of accommodating cable sealing end platforms on the tower body.	
Programme	Completion: - October 2032
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Construction: • Still to be commenced • Still to be commenced • Still to be commenced



<u>V1.0</u>

SPT-RI-3972 - Clyde's Mill - Dalmarnock 275kV No.1(2) Circuits LMS

OVERVIEW OF WORKS

A Load Management Scheme (LMS) is required at Clyde's Mill 275kV to monitor circuit loadings on:

• Clyde's Mill – Dalmarnock No.1 275kV Circuit

• Clyde's Mill – Dalmarnock No.2 275kV Circuit

Any overload on either circuit will be removed by the LMS scheme managing the appropriate non-firm connections via appropriate LMS outstations.

A current and voltage measurement is required from both circuits such that the power flow of the circuit can be determined. This SPT LMS scheme will compare these measured values to the seasonal rating of the circuits such that overloads can be detected.

This LMS will be required to transfer the following signals to relevant LMS outstations located in GSPs with connections that require management by this scheme.

Programme	Completion: - July 2027
Progress	Design: • Commenced Consenting:
	 Not Required Detailed Engineering: Still to be commenced
	Tendering:Still to be commenced
	Construction: Still to be commenced
	Commissioning/Close Out:Still to be commenced



<u>V1.1</u>	SPT-RI-4097 - Craigenputtlock to R Route Tee-Off 132kV Circuits
	and Associated Works
	OVERVIEW OF WORKS
Tongland 132/33 with both circuits	modate the connections within the South-West Scotland region, it is proposed to lift the V group out of New Cumnock and be fed from the proposed Craigenputtlock 400/132kV, connecting to the proposed Craigenputtloch 132kV 'B' board. This TORI contains the works 132kV OHL circuits from Glenlee – Craigenputtlock.
Programme	Completion: - October 2036
Progress	Design:
	Still to be commenced
	Consenting:
	Still to be commenced
	Detailed Engineering:
	Still to be commenced
	Tendering:
	Still to be commenced
	Construction:
	Still to be commenced
	Commissioning/Close Out:
	Still to be commenced



<u>V1.1</u>	SPT-RI-4125 - Craigenputtlock 132kV 'B' Board
OVERVIEW OF WORKS In order to accommodate the connections within the South-West Scotland region, it is proposed to establish a 132kV 'B' board at the proposed Craigenputtlock 400/132kV substation in split from the 132kV 'A' board within the Craigenputtlock area (near Glenlee) that shall be connected to Dumfries North 400kV.	
Programme	Completion: - Under Review
Progress	Design: • Still to be commenced Consenting: • Still to be commenced Detailed Engineering: • Still to be commenced Tendering: • Still to be commenced Construction: • Still to be commenced Construction: • Still to be commenced Commissioning/Close Out: • Still to be commenced



<u>V1.0</u>	<u>SPT-RI-4137 - Redshaw 132kV 'A' Harmonic Filter</u>
OVERVIEW OF WORKS A significant number of wind farms and other types of generation are contracted to connect into Redshaw 400/132kV substation, some connecting via extensive OHL and UGC circuits. These connection configurations introduce low-order harmonic resonances into the network with high harmonic voltages in excess of G5/5 planning and compatibility limits. Following detailed harmonic analysis studies, it is proposed to install two standard 132kV 20MVAr C-Type harmonic filters – one at the 132kV 'A' board (under SPT-RI-4137) and one at the 132kV 'B' board (under SPT-RI-4138).	
Programme	Completion: - June 2029
Progress	 Design: High level design completed Consenting: In line with TORI 2060 Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced



<u>V1.0</u>	<u>SPT-RI-4137 - Redshaw 132kV 'A' Harmonic Filter</u>	
OVERVIEW OF WORKS A significant number of wind farms and other types of generation are contracted to connect into Redshaw 400/132kV substation, some connecting via extensive OHL and UGC circuits. These connection configurations introduce low-order harmonic resonances into the network with high harmonic voltages in excess of G5/5 planning and compatibility limits. Following detailed harmonic analysis studies, it is proposed to install two standard 132kV 20MVAr C-Type harmonic filters – one at the 132kV 'A' board (under SPT-RI- 4137) and one at the 132kV 'B' board (under SPT-RI-4138).		
Programme	Completion: - June 2029	
Progress	 Design: High level design completed Consenting: In line with TORI 2060 Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced 	



<u>V1.0</u>	SPT-RI-4138 - Redshaw 132kV 'B' Harmonic Filter	
OVERVIEW OF WORKS A significant number of wind farms and other types of generation are contracted to connect into Redshaw 400/132kV substation, some connecting via extensive OHL and UGC circuits. These connection configurations introduce low-order harmonic resonances into the network with high harmonic voltages in excess of G5/5 planning and compatibility limits. Following detailed harmonic analysis studies, it is proposed to install two standard 132kV 20MVAr C-Type harmonic filters – one at the 132kV 'A' board (under SPT-RI-4137) and one at the 132kV 'B' board (under SPT-RI-4138).		
Programme	Completion: - June 2029	
Progress	 Design: High level design completed Consenting: In line with TORI 2060 Detailed Engineering: Still to be commenced Tendering: Still to be commenced Construction: Still to be commenced Construction: Still to be commenced Commissioning/Close Out: Still to be commenced 	