Transmission Owner Reinforcement Instruction (TORI)
Quarterly Update Report

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

SP ENERGY NETWORKS

Contents

DWNO	SPT-RI-003 – *Upgrade existing circuits and establish a new route between Bonnybridge and Glenmavis*
OVERVIEW OF WORKS Upgrade existing 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

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

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	SPT-RI-130 – *Replace the conductors on the existing circuit between Strathaven and Smeaton with higher capacity conductors*
OVERVIEW OF WORKS The overhead line conductor system on the existing 11.6km 400,000 Volt double circuit route from Strathaven to Wishaw (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

V2.3	SPT-RI-131 - *ZT route Overhead Line Uprating Works (Branxton – Eccles)*

OVERVIEW OF WORKS

The overhead line conductor system on the existing 34.3km 400,000 Volt double circuit route from Eccles to the Branxton sealing end compound (ZT route) will be uprated to achieve an increased thermal rating.

The existing ZT overhead line route is equipped with twin 700mm2 AAAC (Araucaria) conductor operating at 75oC. The maximum operating temperature of the conductor system will be increased from 75oC to 90oC.

These works will not modify the prevailing circuit configuration.

Programme	**Completion:** - 13th 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

V2.0	SPT-RI-146 - *Maybole to Coylton 132kV Overhead Line Uprating*

OVERVIEW OF WORKS

Contracted renewable generation at Maybole GSP has reached a level where the thermal uprating of the 132kV circuit between Maybole and Coylton is required to facilitate this generation.

The two 132kV circuits between Maybole and Coylton are on a mixture of double circuit tower lines, single circuit tower lines, single circuit wood pole overhead lines and incorporates three 132kV underground cable sections (~1km total). The total route length is 22.5km and consists of CD Route (13km double circuit), CG Route (5km single circuit), N Route (5km single circuit) and X Route (4.5km double circuit).

The existing overhead line circuits are single 175mm ACSR with a pre-fault summer rating of 89MVA.

To accommodate the generation at Maybole GSP it is proposed that the existing Maybole to Coylton 132kV overhead line circuits are reconductored using LARK HTLS conductor. This gives a summer pre-fault continuous rating of 227MVA. In addition, the three 132kV underground cable sections on the circuit (~1.2km in total), will be replaced with 1600mm2 Al XLPE cable to match the new rating of the overhead line.

Needs case carried 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

V2.0	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:

	Winter		Autumn		Summer	
	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	**Commissioning: - September 2028** **Completion:** - (including decommissioning): April 2029

Progress	**Design:**
	• Early engineering design phase. Surveys of current OHL completed.
	
	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 Sep-2024.
	Tendering:
	• Still to Commenced.
	
	Construction:
	• Still to commence, anticipated start date Q1 2026
	
	Commissioning/Close Out:
	• Still to commence, commissioning date September 2028

V2.6	SPT-RI-176 - *New Cumnock Overload Protection Scheme*
OVERVIEW OF WORKS To utilise the non-firm capacity at New Cumnock and the 132kV network in South West Scotland an overload protection scheme is required at New Cumnock substation to monitor the loading on the 275kV circuits from Coylton, supergrid transformers and 132kV circuits at New Cumnock to prevent any overloading on the transmission system. The scheme at New Cumnock will communicate with remote systems at Dunhill, Blackhill, Glenglass and Kendoon substations to trigger tripping signals to generators connected at these substations.	
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.

V1.5	SPT-RI-185 - *Galashiels to Eccles 132kV Overload Protection Scheme*
OVERVIEW OF WORKS It is proposed to install an Energy Management (Overload Protection) Scheme at Galashiels 132kV substation to monitor the following circuits: 1) Galashiels to Eccles No.1 132kV Circuit 2) Galashiels to Eccles No.2 132kV Circuit Installation of an LMS Outstation at Hawick 132/33kV substations in order to receive a trip signal from Galashiels. If the seasonal pre-fault rating of these circuits is exceeded a trip signal will be issued to SPD at Hawick 132/33kV substation 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.

V2.1	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

V1.5	SPT-RI-204 - *Wishaw-Smeaton-Torness-Eccles Overload Protection Scheme*
OVERVIEW OF WORKS A Category 2 overload protection scheme is proposed to be installed within the Wishaw – Smeaton 400kV network to protect the system from network overload under certain outage conditions and as part of a Category 4 Intertripping Scheme to protect the Wishaw – Smeaton – Torness – Eccles 400kV Network from dead line charging 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.

V2.6	SPT-RI-211 - *Holm Hill Switching Station to Lorg Wind Farm Junction 132kV Circuit*
OVERVIEW OF WORKS Construct a new 132kV switching station, named Holm Hill, and install a 132kV OHL circuit between the new site and the tee off points to Shepherds Rig and Lorg wind farms. At an appropriate tee-off point on the New Cumnock to Kendoon 132kV circuit, install the new Holm Hill 132kV Switching Station containing one 132kV circuit breaker with two associated disconnectors. Install ~8km of 132kV wood pole overhead line with High Temperature Low Sag (HTLS) EAGLE conductor (190°C, minimum summer pre-fault rating 295MVA) to the tee point between Shepherd's Rig and Lorg wind farms.	
Programme	**Completion:** - 30 April 2027
Progress	**Design:** • **Early design in progress. OHL route design in progress. Holm Hill switching station design in progress.** **Consenting:** • **Consultation on the preferred route took place recently and responses are being reviewed to confirm the route to be taken forward. 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**

V2.1	SPT-RI-213 - *New Cumnock 275/132kV Transformer SGT2B*
OVERVIEW OF WORKS At New Cumnock substation a third 275/132 240MVA transformer will be installed to increase the capacity of the 132kV Board B.	
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

V2.2	SPT-RI-222 - *Glenlee to Tongland 132kV Modernisation*
OVERVIEW OF WORKS The works in this modernisation entails the construction of a new L4 (single POPLAR) 132kV double circuit from Glenlee to Tongland. This will enable the increase of transfer capability from Tongland to the wider supergrid system at New Cumnock and increase the local boundary capabilities of the 132kV system. The transfer capability of Tongland is currently limited by the single 132kV Lynx circuit between Glenlee and Dumfries and this scheme will remove this limitation.	
Programme	**Completion:** - August 2027
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*: o Civil Works – On hold pending Public Inquiry outcome. o 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.

V1.0	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 **Commissioning/Close Out:** • Complete

V2.1	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:** - 30 Sept 2025
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

V2.1	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	SPT-RI-231 - *Replace the conductors on the existing circuit between Elvanfoot and Harker with higher capacity conductors*
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:

V2.2	SPT-RI-233 - *Gretna to Jun V 132kV Circuit Reinforcement (AL Route)*
OVERVIEW OF WORKS 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

V2.3	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
Progress	**Design:** • TBC **Consenting:** • TBC **Detailed Engineering:** • TBC **Tendering:** • TBC **Construction:** • TBC **Commissioning/Close Out:** • TBC

V2.1	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

V2.0	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

V1.0	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:** - Under review
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.

V2.2	SPT-RI-292 - *Lorg to Shepherds Rig tee*
OVERVIEW OF WORKS Install ~10km of 132kV wood pole overhead line with UPAS conductor (75°C, minimum summer pre-fault rating 176MVA) between Lorg 132kV substation and the proposed Shepherds Rig tee connection. The will form part of the Lorg to Holmhill 132kV overhead line.	
Programme	**Completion:** - November 2025
Progress	**Design:** • Early design in progress. OHL route design in progress. Holm Hill switching station design in progress. **Consenting:** • Consultation on the preferred route took place recently and responses are being reviewed to confirm the route to be taken forward. 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

V2.4	SPT-RI-293 - *Carrick 275kV substation*
OVERVIEW OF WORKS A new 275kV substation will be installed on the Coylton-Mark Hill 275kV circuit (YY route) approximately 25km northeast of Mark Hill substation. The YY route will be turned in to the new substation with a 275kV circuit breaker on each circuit. The new circuit breakers will maintain the single-phase high-speed auto reclose capability which 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

V1.1	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

V2.3	SPT-RI-296 - *Glenshimmeroch Collector Substation 132kV OHL 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 Glenshimmeroch collector substation to tee point on the New Cumnock – Kendoon 132kV circuit. This will involve reconductoring a section of the overhead line between the proposed Glenshimmeroch collector substation and the cable end (at pole 1) on the New Cumnock 132kV circuit, approximately 6.3km, by replacing the existing UPAS conductor with an EAGLE HTLS conductor on the existing wood pole system. Replace the existing cable, ~1km, on the Glenshimmeroch / New Cumnock 132kV circuit with 2000mm2 Cu 132kV cable including cable sealing end if required.	
Programme	**Completion:** - Under review
Progress	**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.

V1.0	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
Progress	**Design:** • TBC **Consenting:** • TBC **Detailed Engineering:** • TBC **Tendering:** • TBC **Construction:** • TBC **Commissioning/Close Out:** • TBC

V2.4	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:** - April 2027
Progress	**Design:** • Still to be commenced **Consenting:** • Commenced. Consent for Kendoon North switching station in progress. **Detailed Engineering:** • Commenced **Tendering:** • Still to be commenced **Construction:** • Still to be commenced **Commissioning/Close Out:** • Still to be commenced

BDUP	SPT-RI-1560 – *Upgrade the existing network to a higher voltage between Beauly and Denny*
OVERVIEW OF WORKS Upgrade the existing network to a higher voltage between Beauly and Denny	
Programme	**Completion:** - 2029
Progress	**Current stage(s):** • Design and development, Consenting, Ofgem project assessment, Procurement **Next stage:** • Optioneering end date/ design and development start date

V1.2	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. A current and voltage measurement is required for each transformer so the direction, as well as magnitude, of the power flow through the transformer can be determined.	
Programme	**Completion:** - Complete
Progress	**Design:** • Complete **Consenting:** • Complete **Detailed Engineering:** • Complete **Tendering:** • Complete **Construction:** • Complete **Commissioning/Close Out:** • Complete

V2.3	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 **Commissioning/Close Out:** • Complete

V2.1	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 Engineering:** • Still to be commenced **Tendering:** • Still to be commenced **Construction:** • Still to be commenced **Commissioning/Close Out:** • Still to be commenced

V2.2	SPT-RI-1741 - *Neilston Supergrid Transformers Auto Changeover Scheme*
OVERVIEW OF WORKS An auto changeover 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

V2.2	SPT-RI-1745 - *Kincardine to Fife Grid 275kV switchgear and cable 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. **Commissioning/Close Out:** • Still to be commenced.

V1.1	SPT-RI-1791 - *Cockenzie to Eccles 400kV (ZA route)*
OVERVIEW OF WORKS The project will uprate the 400kV double circuit between Cockenzie 400kV substation and Eccles 400kV substation from twin Totara to triple Totara operating at 90℃.	
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

V2.4	SPT-RI-1796 - *Cousland 400kV GIS substation*
OVERVIEW OF WORKS A new 400kV double busbar substation, utilising Gas Insulated Switchgear (GIS), will be established south of Cockenzie in the Cousland area in the vicinity of the Torness/Fallago to Smeaton/Wishaw 400kV double circuit (ZS route) and Cockenzie to Eccles 400kV double circuit (ZA Route) crossing. Both the ZA and the ZS routes will be turned into the new substation. The substation known for the purposes of this TO Reinforcement Instruction as 'Cousland 400kV Substation', and associated plant and apparatus, will provide a node for the connection of onshore 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	SPT-RI-1797 – *Replace the conductors on the existing circuit 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℃.	
Programme	**Completion:** - 2030
Progress	**Current stage(s):** • Design and development, Consenting, Ofgem project assessment, Procurement **Next stage:** • Procurement start date

WCD4	SPT-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:** - 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

TGDC	SPT-RI-1873 – *New offshore HVDC link between East Scotland and the East of England (Eastern Green Link 4)*
OVERVIEW OF WORKS Installation of a 2 GW HVDC subsea link between the East Lothian area in South East Scotland, and the South Humber area in North East England. Complete associated AC onshore reinforcement works at both terminals.	
Programme	**Completion:** - 2034
Progress	**Current stage(s):** • Design and development **Next stage:** • Consent Application Date

V1.0	SPT-RI-1879- *Cousland 400kV GIS substation*
OVERVIEW OF WORKS A new substation will be established on the Longannet – Mosmorran 275kV circuit (YJ Route) approximately between YJ010 and YJ011. The YJ route (south circuit) will be turned in to the new substation with a 275kV circuit breaker on each 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 uprate*
OVERVIEW OF WORKS It is proposed to uprate the existing Longannet – Westfield – Mosmorran circuits (both north and south) by reconductoring to accommodate the generation in the area. The following circuits shall be reconductored: Reconductor ~26.5km of the overhead line (on both sides of the towers) between YJ001 to YJ075 with twin Rubus 85C (anticipated; subject to further verification); Reconductor ~3km of the overhead line (on both sides of the towers) between YJ075 to YJ084 with twin Totara 85C (anticipated; subject to further verification); Reconductor ~5.5km of overhead line (on both sides of the towers) between YV001 to YV015 with twin Totara 85C (anticipated; subject to further verification).	
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

V2.0	SPT-RI-1968 - *Neilston 275kV Uprating to 40kA*
OVERVIEW OF WORKS The connection of the second Synchronous Compensator at Neilston 400kV the short circuit rating of Neilston 275kV need to increase 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:** - 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

V2.4	SPT-RI-2058 - *Coalburn North 400kV SS*
OVERVIEW OF WORKS It is proposed to construct a new 400kV substation, indicatively called Coalburn North, to connect into the Strathaven-Elvanfoot 400kV circuit. It is proposed to construct a new 400kV double busbar substation with a bus coupler circuit breaker, 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**

TKUP	SPT-RI-2073 – *New circuit from Kintore to Emmock (Tealing) and upgrade elements of the existing Emmock to Westfield and Alyth to Emmock circuits*
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

V2.3	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

V2.0	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 will 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

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

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:

V1.4	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	SPT-RI-2095 – *Build a new substation north of Kincardine and connect this to Denny North*
OVERVIEW OF WORKS This TO Reinforcement Instruction sets out SP Transmission's (SPT) plans to establish Kincardine North 400kV Substation. The purpose of the project is to facilitate increased power transfer into and through the SPT network from renewable developments across the north of Scotland and enable the decommissioning of Longannet 275kV Substation, which is now approaching end of life. These works are programmed to commence in the RIIO-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

V1.4	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

V2.3	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

V1.3	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

V2.1	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

V2.0	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

V2.0	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:** - July 2027
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

V2.1	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

V1.2	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℃ with similarly rated cable sections.	
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

V1.1	SPT-RI-2275 - *Glenrothes GSP SGT1(2) LMS*
OVERVIEW OF WORKS A Load Management Scheme (LMS) is required at Glenrothes 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 signals to the 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.

V2.0	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*
OVERVIEW OF WORKS To accommodate additional generation on the Cruachan – Windyhill 275kV network, as well as the addition of Creag Dhubh 275kV substation (to be constructed by SHETL), it is proposed to uprate the existing overhead line circuits No.1 and No.2 between Dalmally and Windyhill 275kV substations from twin Totara operating at 50°C to 90°C as a minimum.	
Programme	**Completion:** - June 2027
Progress	**Design:** • TBC **Consenting:** • TBC **Detailed Engineering:** • TBC **Tendering:** • TBC **Construction:** • TBC **Commissioning/Close Out:** • TBC

V1.1	SPT-RI-2321- *Cruachan to Dalmally 275kV OHL Circuit Uprate*
OVERVIEW OF WORKS To accommodate additional generation at Cruachan 275kV substation, it is proposed to uprate the existing overhead line circuits No.1 and No.2 from Cruachan to Dalmally 275kV substation from twin Totara operating at 39°C to 50°C as a minimum.	
Programme	**Completion:** - June 2027
Progress	**Design:** • TBC **Consenting:** • TBC **Detailed Engineering:** • TBC **Tendering:** • TBC **Construction:** • TBC **Commissioning/Close Out:** • TBC

CMN3	SPT-RI-2378, 2417 & 2418 - *New circuit between South East Scotland and North West England*
OVERVIEW OF WORKS New circuit between South East Scotland and North West England comprising creation of new build 400kV double circuit OHL from a new Gala North 400/132kV S/S to the B6 boundary south of Newcastleton with associated S/S infrastructure at a new Teviot 400kV S/S, located 13km south of Hawick..	
Programme	**Completion:** - 2033
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.

V3.0	SPT-RI-2418 - *Teviot 132kV "B" Board*
OVERVIEW OF WORKS 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.	
Programme	**Completion:** - May 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

V1.1	SPT-RI-2436 - *Easterhouse 275kV Fault Level Mitigation Works*
OVERVIEW OF WORKS Construction of a new 132kV GIS substation at Westfield to replace existing AIS. This will facilitate new generation in the Fife area. The location of this substation is currently planned to be constructed within a free bay in the existing 275kV 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

V1.0	SPT-RI-2447 - *Westfield 132kV GIS Substation*
OVERVIEW OF WORKS Construction of a new 132kV GIS substation at Westfield to replace existing AIS. This will facilitate new generation in the Fife area. The location of this substation is currently planned to be constructed within a free bay in the existing 275kV 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

V1.3	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

V1.2	SPT-RI-2462 - *Cruachan – Dalmally Load Management Scheme*
OVERVIEW OF WORKS To accommodate a large volume of new renewable generation in the Argyll area whilst being able to operate the Cruachan – Dalmally – Creag Dhubh – Windyhill 275kV network in a safe and efficient manner, it is proposed to install a Load Management Scheme (LMS) at Cruachan and Dalmally 275kV substations to monitor the Dalmally – Inverarnan and Dalmally Creag Dhubh 275kV circuits such that if one circuit is out of service, a signal will be sent to appropriate generator(s) to constrain the (generation) export and (pumping demand) import to prevent 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

V1.1	SPT-RI-2482 - *Cruachan 275kV Tower and OHL Works*
OVERVIEW OF WORKS To enable a new 275kV circuit breaker (associated with Cruachan Units 3 & 4) to be installed at Cruachan substation, a new steel tower and a section of 275kV overhead line will be required. The overhead line conductor shall match 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-RI-2510 - *Saltcoats A GT OLP*
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

V1.2	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

V1.1	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
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 **Commissioning/Close Out:** • Still to be commenced

V1.0	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

V1.0	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

V1.1	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
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

V2.1	SPT-RI-2691 - *Windyhill, Strathleven, Helensburgh, Sloy Load Management Scheme*

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 Replacement*
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

V1.1	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

V1.1	SPT-RI-2732 - *Busbar Extension and XZ032 Terminal Tower 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:** • Commenced **Consenting:** • Not required **Detailed Engineering:** • Commenced **Tendering:** • Still to be commenced **Construction:** • Still to be commenced **Commissioning/Close Out:** • Still to be commenced

V1.0	SPT-RI-2784 - *CL & CK Route Temperature Uprating*
OVERVIEW OF WORKS In order to alleviate overloads on the 132kV circuits on CL and CK Routes between Windyhill, Strathleven, Helensburgh and Sloy substations it is required to increase the operating temperature of the circuits from 50°C to 65°C. This increase in operating temperature provides sufficient headroom to remove any intact overloads seen on the 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

V2.2	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

V1.0	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

V2.1	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

V1.0	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. **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-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:** - April 2029
Progress	**Design:** • Initial early stages of design have commenced. **Consenting:** • Initial early stages of consenting have commenced. **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

V2.0	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 **Commissioning/Close Out:** • Still to be commenced

WCN2	SPT-RI-2862, 3309, 3498 & 3566 – *New circuit between south west Scotland and North West England*

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.

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).

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

V1.1	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 •

V1.2	SPT-RI-2905 - *Mossmorran, Glenniston, Westfield, Redhouse 132kV Circuits LMS*
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

V1.1	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.

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

V1.0	SPT-RI-2935 - *Windyhill-Whistlefield-Dunoon-Sloy 132kV OHL between CM01 and CM12*
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

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

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

V2.1	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

V1.1	SPT-RI-2960 - *Neilston SGT3A and SGT3B Overload Protection Scheme*
OVERVIEW OF WORKS To protect against the overloading of the Braehead Park – Erskine/Devolmoor 132kV circuits for the loss of either SGT3A or SGT3B at Neilston 132/275 and 400kV substation. It is proposed to carry out the following: • Monitor 132kV circuit breaker position of 480 at Neilston 132kV substation • Monitor 275kV circuit breaker positions of S30 and S40 at Neilston 275kV substation • For the opening of the 132kV or 275kV referenced above, a trip signal will be sent to the directly connected generator • All associated protection and control works. • All associated environmental and civil works. • Miscellaneous 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:** • Still to be commenced

V1.1	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

V1.3	SPT-RI-2973 - *Branxton to Springfield Collector 400kV Circuit and 400/132kV SGT*
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 **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-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

V1.0	SPT-RI-3027 - *Redhouse 132kV circuit breaker*
OVERVIEW OF WORKS There	
Programme	**Completion:** - October 2029
Progress	**Design:** **Consenting:** • In line with TOCO 2868 **Detailed Engineering:** • Still to be commenced **Tendering:** • Still to be commenced **Construction:** • Still to be commenced **Commissioning/Close Out:** • Still to be commenced

VC.T005659	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:** - 30 September 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

V2.1	SPT-RI-3068 - *Teviot to Sundhope Collector Substation 132kV circuit*
OVERVIEW OF WORKS The scope of this TORI 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

V2.0	SPT-RI-3091 - *Kincardine 275kV (Shared) GIS Switchgear*

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

V2.0	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:** - May 2030
Progress	**Design:** • TBC **Consenting:** • TBC **Detailed Engineering:** • TBC **Tendering:** • TBC **Construction:** • TBC **Commissioning/Close Out:** • TBC

V1.0	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 **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-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 **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-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:** - Under review
Progress	**Design:** • Under review **Consenting:** • Under review **Detailed Engineering:** • Under review **Tendering:** • Under review **Construction:** • Under review **Commissioning/Close out:** • Under review

NHNC	SPT-RI-3168 – *New circuit from north east Scotland to the Central 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

V1.2	SPT-RI-3185 - *KILW-HUNF-HUNE No.2 Cable Replacement*
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 no.2 cable circuit from KILW-HUNF-HUNE. It is proposed to replace the existing ~3.2km of 132kV cable between KILW-HUNE to achieve a similar 220MVA rating per circuit as the future BU Route.	
Programme	**Completion:** - May 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

V1.1	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

V1.0	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

V1.1	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

V1.4	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:** • 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-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

V2.2	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

V1.3	SPT-RI-3321 - *Coalburn – Coalburn North 400kV interconnector*
OVERVIEW OF WORKS To accommodate the connection of Shiel Hydrogen Plant (SPT-TOCO-3024) that represents 1400MW of demand in Coalburn North 400kV substation, it is proposed to install a new interconnector circuit between Coalburn 400kV substation 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

V1.1	SPT-RI-3345 - *Torness-Innerwick-Dunbar 132kV Cable Replacement*
OVERVIEW OF WORKS 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:** - May 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

V1.0	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 nameplate rating during a Planned Outage, Unplanned Outage or Fault Outage on the adjacent circuit.
A current and voltage measurement is required on of 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:** - 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

V1.0	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.

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

V1.5	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

1.1	SPT-RI-3406 Blacklaw 400kV Collector Substation
OVERVIEW OF WORKS To establish a new 400kV collector substation, fed from Wishaw 400kV substation via a single 400kV circuit. The collector substation is to be named Blacklaw 400kV collector substation. The project involves establishing a new 400kV bay at Wishaw 400kV GIS substation, installing approx. 300m of 400kV UGC to the Blacklaw 400kV collector site.	
Programme	**Completion:** - October 20030
Progress	**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

V1.0	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

V1.0	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

V1.0	SPT-RI-3463 - *Mark Hill North – South Ayrshire HVDC Bussing 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

V1.5	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

V1.0	SPT-RI-3488 - *Currie SGT3 DCB Installation*
OVERVIEW OF WORKS To provide additional security and to accommodate a new generation and demand connection within the Currie area of the network, there is a requirement to replace the H23 disconnector at Currie 275/132kV substation with a DCB.	
Programme	**Completion:** - April 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

V1.2	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

V1.0	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:** • 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-3498 - *Glenmuckloch 400kV - Dumfries North 400kV*

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

V1.1	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.

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-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

V1.0	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

V1.0	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
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

V2.2	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

1.0	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

V1.5	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

V1.0	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

V1.1	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

V2.0	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.	
Programme	**Completion:** - June 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

V1.1	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

V1.1	SPT-RI-3730 - *Newarthill S50 275kV Circuit Breaker*

OVERVIEW OF WORKS

To facilitate connections out of Newarthill substation a new 275kV circuit breaker bay needs to be installed which will be teed off the existing 275kV busbars.

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

V1.3	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

V1.4	SPT-RI-3739 - *Newarthill Substation Platform Extension and New Control Building*

OVERVIEW OF WORKS

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.

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

V1.0	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 solution with one 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

V1.0	SPT-RI-4137 - *Redshaw 132kV 'A' 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 **Commissioning/Close Out:** • Still to be commenced

V1.0	SPT-RI-4138 - *Redshaw 132kV 'B' Harmonic Filter*
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Programme	**Completion:** - June 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