

SP Energy Networks

Transmission Owner Reinforcement Instruction (TORI) Quarterly Update Report January 2021 – March 2021



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

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Please note below in relation to all Transmission Owner Reinforcement Instruction projects.

In light of the present COVID-19 pandemic, we are continuing to assess all projects to ensure where staff can safely work in compliance with government guidelines, they are so doing. Any impact on timescales will be communicated once information is known and confirmed.

<u>SPT-RI-001(a)</u> <u>V1.5</u>	<u>Beaully Denny 400kV Reinforcement</u>
<p align="center">OVERVIEW OF WORKS</p> <p>Construction of a 400,000 volt double circuit overhead transmission line from Denny North to the SP Transmission/SHE Transmission boundary, forming part of a Supergrid connection from Denny North substation in the SP Transmission area to Beaully substation in the SHE Transmission area (via Braco, Errochty, Fort Augustus and Fasnakyle). One circuit on the new overhead line will operate at 400,000 volts, while the other will operate at 275,000 volts. This connection will replace that part of the existing Bonnybridge to Braco 132kV double circuit overhead line within the SP Transmission area Construction of Denny North 400,000/ 275,000/ 132,000 volt substation.</p>	
Programme	Completion: - July 2016 DENN-BONN 132kV infeed Beaully to Denny 275kV/400kV circuit energised Nov 2015 132kV wirescape rationalisation works completion planned for December 2019. Visual mitigation works planned for completion March 2022.
Progress	Design & Consenting Complete Detailed Engineering Complete Tendering Complete Construction SGT3 circuit energised August 2016. 1 st phase of visual mitigation concluded. 2 nd Phase now concluded. 3 rd Phase tender now complete – Works to begin Jan 2021 – completing July 2021. 132kV Wirescape cable civil ducting works complete. Both cable circuits are now installed and energised (October 19). 132kV OHL dismantling works now underway (due to complete 3 rd quarter 2020) New 275kV circuit energised 9 th November 2015 New 400kV circuit energised 19 th November 2015 Link to related info http://www.spenergynetworks.co.uk/pages/beaully_denny_overhead_line_upgrade.asp



<u>SPT-RI-003</u> <u>V2.4</u>	<u>Denny-Strathaven 400kV Reinforcement</u> <u>ENSG Central Scheme</u>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>Construct a new 400,000 Volt double circuit overhead line from Bonnybridge to Newarthill and reconfigure associated sites to establish a fourth north to south double circuit Supergrid route through the Scottish central belt.</p> <p>One side of the new overhead line will operate at 400,000 Volts, the other at 275,000 Volts. This reinforcement will establish Denny-Bonnybridge, Bonnybridge-Wishaw, Wishaw-Strathaven No.2 and Wishaw-Torness 400,000 Volt circuits, and a Denny-Newarthill-Easterhouse 275,000 Volt circuit.</p> <p>This will continue to be updated following the outcome of the annual NOA process.</p>	
Programme	Completion: - October 2028
Progress	<p>Design Ongoing subject to Network Options Assessment (NOA) Process and potential Ofgem Strategic Wider Work (SWW)</p> <p>Consenting Overhead line routing underway with potential route corridor identified. Consultations due to begin in next quarter.</p> <p>Detailed Engineering Still to commence - Subject to Network Options Assessment (NOA) Process</p> <p>Tendering Communications Consultant contract awarded.</p> <p>Construction Still to commence - Subject to Network Options Assessment (NOA) Process</p> <p>Commissioning/Close Out Still to commence - Subject to Network Options Assessment (NOA) Process</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/network_reinforcement_and_modernisation.aspx </p>



<u>SPT-RI-004</u> <u>V2.4</u>	<u>Denny-Kincardine 400kV Reinforcement (East Coast Phase 1 Reinforcement and Re-Profiling)</u>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>SP Transmission works associated with SHE Transmission East Coast Phase 1 Reinforcement (reference SHET-RI-009) and SHE Transmission East Coast Re-Profiling (reference SHET-RI-097), comprising:</p> <ul style="list-style-type: none"> • Upgrading of the existing Kincardine-Tealing/ Kintore (XL)₁ overhead line route from 275kV 50°C operation to 275kV 65°C operation between Kincardine and the SP Transmission/ SHE Transmission border; • Protection and control works at Kincardine 275kV Substation associated with the development of the SHE Transmission Alyth 275kV Substation; • Increasing the maximum operating temperature of the Longannet-Mossmorran-Westfield-Tealing 275kV overhead line routes to 65°C, and replacing the associated 275kV cable sections at Longannet to match the increased overhead line rating; and • Terminate the existing Windyhill-Lambhill-Longannet 275kV circuit in Denny North 275kV Substation, creating Windyhill-Lambhill-Denny North and Denny North-Longannet No.2 275kV circuits. <p>This will continue to be updated following the outcome of the annual NOA process.</p>	
Programme	Completion: - October 2023
Progress	<p>Design Early Engineering Design complete, detailed design ongoing</p> <p>Consenting Identification of impacted landowners complete. Environmental surveys have commenced and are progressing.</p> <p>Detailed Engineering Ongoing</p> <p>Tendering Still to commence - Subject to Network Options Assessment (NOA)</p> <p>Construction Still to commence - Subject to Network Options Assessment (NOA)</p> <p>Commissioning/Close Out Still to commence - Subject to Network Options Assessment (NOA)</p> <p>Link to related info http://www.spenergynetworks.co.uk/pages/east_coast_400kv_reinforcement_project.asp</p>

<p><u>SPT-RI-028</u> <u>V2.12</u></p>	<p><u>North Argyll Reinforcement: Dalmally Windyhill 275kV Reconfiguration</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>As part of its non-load related asset modernisation programme, SPT will replace and reconfigure Dalmally 275kV substation to a double busbar arrangement (Scope 1).</p> <p>As part of its non-load related asset modernisation programme, SPT will uprate the overhead line conductor between Dalmally and Windyhill (Scope 2).</p> <p>As part of a joint SPT/ SHE Transmission project to reinforce the transmission network in north Argyll and accommodate proposed renewable generation schemes, SPT will extend Dalmally 275kV Substation and install two new double busbar bays to provide SHE Transmission with two 275kV points of connection at Dalmally 275kV Substation (Scope 3).</p>	
<p>Programme</p>	<p>Completion: - Scope 1 Complete Scope 2 Complete October 2019 for wiring. Clearance works and Foundations Dec 2022. Scope 3 October 2023</p>
<p>Progress</p>	<p>Design Scope 1: Complete Scope 2: Complete for reconductoring works / design evaluation in progress for remaining clearance infringements. Remaining 12 foundations to be complete along with removal of accesses. Scope 3: In progress</p> <p>Consenting Scope 1: Not required Scope 2: Wiring Complete / further consent is required for access road construction in National Park to resolve remaining clearance infringements and remaining foundations. Scope 3: Not commenced</p> <p>Detailed Engineering Scope 1: Complete Scope 2: Complete / to complete for remaining clearance infringements. Scope 3: Not commenced</p> <p>Tendering Scope 1: Complete Scope 2: Tenders pending clarification how to address the clearance infringements works Scope 3: Not commenced</p> <p>Construction</p>

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	<p>Scope 1: Complete Scope 2: Complete (excluding clearance infringements works and remaining foundations) Scope 3: Not commenced</p> <p>Commissioning/Close Out Scope 1: Complete Scope 2: October 2019 completion (excluding clearance infringements works & foundations works) Scope 3: Not commenced</p>
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<p><u>SPT-RI-124</u> <u>V2.6</u></p>	<p><u>400kV GIS substation in Torness Area</u></p>
<p>OVERVIEW OF WORKS</p> <p>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 six Transmission Interface Points to which the Firth of Forth offshore transmission system assets will connect.</p>	
<p>Programme</p>	<p>Completion: - September 2026</p>
<p>Progress</p>	<p>Design Currently working on finding the optimal location for the substation in conjunction with environmental assessment.</p> <p>Consenting Preliminary site selection works completed and currently under review to determine optimal preferred location.</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>http://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.asp</p>



<p><u>SPT-RI-125</u> <u>V2.3</u></p>	<p><u>Thornton Bridge Torness Cables</u></p>
<p align="center">OVERVIEW OF WORKS</p> <p>Following an outage of the Smeaton / Fallago 400kV circuit or the Smeaton SGT2 transformer, the existing 400kV cable between Torness / Crystal Rig may become overloaded.</p> <p>To prevent an overload on the Torness / Crystal Rig 400kV cable circuit, it is proposed that this Thornton Bridge / Torness 400kV cable will be updated.</p>	
<p>Programme</p>	<p>Completion: - December 2021</p>
<p>Progress</p>	<p>Design Early engineering design phase complete</p> <p>Consenting Identifying affected landowners and enabling initial discussions</p> <p>Detailed Engineering Ongoing</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info http://www.spenergynetworks.co.uk/pages/network_reinforcement_and_modernisation.asp</p>



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<p><u>SPT-RI-126</u> <u>V2.1</u></p>	<p><u>East Coast HVDC Link</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>Installation and commissioning of a 2GW HVDC link between the Torness area in East Lothian Scotland, and Hawthorn Pit in North East England. Link consisting of 2 x HVDC converter station terminals and Installation of an approximate 200km of offshore and onshore cabling. . Completion of associated AC onshore reinforcement works at both terminals.</p> <p>These works are subject to NOA process, scope, costs and program are subject to review and change. A “proceed” direction was made in the January 2021 [NOA6] and a joint TO project team has been established. Initial needs case submitted and under OFGEM review with a view to submitting a strategic wider work (SWW) Final needs case in Q4 2021.</p>	
<p>Programme</p>	<p>Completion: - December 2027</p>
<p>Progress</p>	<p>Design Ongoing works to define System and technology requirements through supplier engagement and presentations. Ongoing development of understanding of HVDC technology maturity and supply chain capacity. OFGEM initial needs case submitted and under review. Final Needs case to be submitted Q4 2021</p> <p>Consenting Marine survey contract awarded and E2DC offshore surveys works complete with lab data analysis ongoing. Landing/intertidal Geotech works planned for June 2021. Marine Licence applications submission planned for Q2 2022. AC and DC cable route environmental and technical assessment complete. Marine Scoping Report submitted March 2021.</p> <p>Detailed Engineering Engineering will be multi staged. Functional design to be developed throughout 2021. Subject to Network Options Assessment (NOA) Process and OFGEM Initial and Final Needs case assessment.</p> <p>Tendering Project specific Pre-qualification will be developed Q2 2021 with Functional specifications being developed throughout 2021. Subject to Network Options Assessment (NOA) Process, OFGEM Final Needs case assessment and LOTI process</p> <p>Construction Still to be commenced - Subject to Network Options Assessment (NOA) Process, OFGEM Final Needs case assessment and LOTI process</p>



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	<p>Commissioning/Close Out Still to be commenced - Subject to Network Options Assessment (NOA) Process, OFGEM Final Needs case assessment and LOTI process</p> <p>Link to related info http://www.spenergynetworks.co.uk/pages/network_reinforcement_and_modernisation.asp https://www.nationalgrideso.com/document/162356/download</p>
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<p><u>SPT-RI-130</u> <u>V2.2</u></p>	<p><u>Strathaven – Smeaton</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>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.</p> <p>The overhead line conductor system on the existing 61.8km 400,000 Volt double circuit route from Wishaw to Smeaton (XJ route) will be replaced with a conductor system of increased thermal rating.</p> <p>The existing XH and XJ overhead line routes are equipped with twin 400mm² ACSR (Zebra) conductor operating at 50°C. The replacement conductor system is subject to ongoing consideration.</p> <p>These works will not modify the prevailing circuit configuration.</p>	
<p>Programme</p>	<p>Completion: - April 2024</p>
<p>Progress</p>	<p>Design Due to changes in contracted background, design review is required. Design review to be arranged.</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/network_reinforcement_and_modernisation.aspx</p>



<p><u>SPT-RI-137</u> <u>V2.5</u></p>	<p><u>Torness/Innerwick/Dunbar 132kV Reinforcement</u></p>
<p align="center">OVERVIEW OF WORKS</p> <p>It is proposed to reinforce the Torness/Innerwick/Dunbar No.1 and No.2 132kV circuits, consisting of tower lines and underground cables, to provide a minimum pre-fault summer rating of 108MVA per circuit. For the overhead line section, the transmission works required involve a re-profile of the existing Lynx ACSR conductor system from 50°C to operate at 65°C. The works will also involve installation of a Load Management Scheme to monitor the 132kV No.1 and No.2 circuits (capacity limited by the underground cable) post completion of the new transformers installation at Dunbar GSP in order to send a trip signal to SPD's appropriate generation in an event of an overload.</p>	
<p>Programme</p>	<p>Complete</p>
<p>Progress</p>	<p>Design Complete</p> <p>Consenting Complete</p> <p>Detailed Engineering Complete</p> <p>Tendering Complete</p> <p>Construction Complete</p> <p>Commissioning/Close Out Complete</p> <p>Link to related info</p> <p>http://www.spenergynetworks.co.uk/pages/network_reinforcement_and_modernisation.asp</p>



<p><u>SPT-RI-146</u> <u>V2.0</u></p>	<p><u>Maybole to Coylton 132kV Overhead Line Upgrading</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>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.</p> <p>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).</p> <p>The existing overhead line circuits are single 175mm ACSR with a pre-fault summer rating of 89MVA.</p> <p>To accommodate the generation at Maybole GSP it is proposed that the existing Maybole to Coylton 132kV overhead line circuits are reconducted 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 AI XLPE cable to match the new rating of the overhead line.</p> <p>Needs case and requirement for this TORI under review.</p>	
<p>Programme</p>	<p>Completion: - SP Transmission are reviewing the future needs case with this reinforcement due to changes in the generation background.</p>
<p>Progress</p>	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced, anticipated start date Q2 2020</p> <p>Commissioning/Close Out Still to be commenced, completion date August 2022</p>



<u>SPT-RI-151b</u> <u>V2.0</u>	<u>Galashiels to Eccles 132kV Overhead Line</u> <u>Rebuilding</u>																												
OVERVIEW OF WORKS																													
<p>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.</p> <p>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:</p>																													
	<table><tr><td></td><td colspan="2">Winter</td><td colspan="2">Autumn</td><td colspan="2">Summer</td></tr><tr><td></td><td>Amps</td><td>MVA</td><td>Amps</td><td>MVA</td><td>Amps</td><td>MVA</td></tr><tr><td>Pre-Fault Continuous</td><td>885</td><td>203</td><td>845</td><td>193</td><td>770</td><td>176</td></tr><tr><td>Post-Fault Continuous</td><td>1060</td><td>241</td><td>1000</td><td>230</td><td>915</td><td>210</td></tr></table>		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
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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 to be undertaken. Consenting Early environmental works progressing Detailed Engineering – Still to commence Tendering – Environmental consultant appointed. Construction – Still to commence, anticipated start date Q2 2024 Commissioning/Close Out – Still to commence, completion date September 2028 Link to related info http://www.spenergynetworks.co.uk/pages/network_reinforcem																												



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<p><u>SPT-RI-155</u> <u>V2.2</u></p>	<p><u>Coalburn –Linnmill No.1 132kV Underground Cable Reinforcement</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>There are two 132kV circuits from Coalburn 132kV substation which supply Linnmill 132/33kV Grid Supply Point (GSP). From Coalburn. Each Linnmill 132kV circuit has an initial 3.2km 300mm Cu underground cable section (rated at 123MVA summer continuous and 141MVA cyclic). These connect to a 132kV tower line with each circuit having a 302MVA summer pre- fault continuous rating (ex 275kV circuit).</p> <p>Contracted renewable generation at Linnmill GSP has reached a level where the thermal uprating of the 132kV underground cable section, on the Coalburn to Linnmill GSP No.1 132kV circuit, is required to ensure compliance with the NETS SQSS. (Blacklaw Extension wind farm (69MW) is contracted to connect to the Coalburn to Linnmill No.1 circuit, resulting in this circuits thermal limit being reached before the No.2 circuit).</p> <p>It is proposed to replace the 3.2km 132kV underground cable section, on the Coalburn to Linnmill No.1 132kV circuit, with a 2000mm Cu XLPE cable having a continuous summer rating of 1285A (293MVA).</p>	
<p>Programme</p>	<p>Completion: - October 2021</p>
<p>Progress</p>	<p>Design</p> <p>Initial engineering design phase complete, where contracts have now been awarded.</p> <p>Consenting</p> <p>All necessary wayleaves are in place to facilitate the works. Currently, only third-party consents are outstanding for the cable civils contract, where we are currently progressing with the Scottish Water DOMS process to allow works near the main 42" and 33" water main.</p> <p>Tendering</p> <p>Tendering for cable works commenced in March 2020 HDD – Contract was awarded in August 2020, Cable Duct Installation – Contract was awarded in October 2020. Cable Supply & Install – Contract has been awarded in December 2020.</p> <p>Construction</p> <p>Current programme dates:</p> <ul style="list-style-type: none"> • Horizontal Directional Drill – Complete • Cable Duct Installation – January to May 2021 • Cable Supply Install – May to October 2021

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	Commissioning/Close Out Completion date October 2021.
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<p><u>SPT-RI-158</u> <u>V2.4</u></p>	<p><u>New Cumnock 132kV Substation Extension</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>Contracted renewable generation in South West Scotland has reached a level where the thermal rating of the New Cumnock 275kV substation supergrid 275/132kV transformers, which currently planned to connect to 132kV Board A, is exceeded. There is also a fault level issue triggered by the current contracted generation on the New Cumnock 132kV Board A. To mitigate these issues, it is proposed to separate Board A into Boards A and C whereas Board B remains. Cabling and transformer connections for Boards A and B will also be reconfigured as follows:</p> <ul style="list-style-type: none"> • Board A: 3 × 275/132kV SGT1A, SGT2A and SGT3A 240MVA auto wind transformers, providing a total firm capacity of 720MVA • Board B: 3 × 275/132kV SGT1B, SGT2B and SGT3B 240MVA auto wind transformers, providing a total firm capacity of 720MVA • Board C: 2 × 275/132kV SGT1C and SGT3C 360MVA auto wind transformers, providing a total firm capacity of 720MVA <p>This will provide sufficient transformer capacity for the current overall contracted generation into New Cumnock (the contracted generation position in South West Scotland as indicated in December 2017).</p>	
<p>Programme</p>	<p>Completion: Programme is under review.</p>
<p>Progress</p>	<p>Design Undergoing revised electrical design to Gas Insulated Switchgear (GIS) in order to reduce the platform size and feasibility of enabling works.</p> <p>Consenting Planning application (local) submission consented in October 2020, for original Air Insulated Switchgear (AIS). Likely to require re-submission for GIS solution.</p> <p>Detailed Engineering Electrical design being revised to GIS electrical layout.</p> <p>Tendering Contract awarded and supplier engaged for 2 number 360 MVA transformers – detailed design of these units ongoing. Tender process for enabling works for the reduced platform size to be issued, end of Q2 2021.</p> <p>Construction Still to be commenced. Strimming exercise repeated Feb 2021 in extension</p>

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	<p>area to mitigate against any protected species migrating into the future work area.</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info http://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.asp</p>
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<p><u>SPT-RI-173</u> <u>V2.6</u></p>	<p><u>Glenglass Extension and Glenmuckloch Collector</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>To enable the connection of generation around the Glenmuckloch area, the 132kV network need to be extended from Glenglass substation to Glenmuckloch. To achieve this, it is proposed to build a new 132kV double circuit between Glenglass and Glenmuckloch. The project will mainly entail the extension of the proposed GIS substation at Glenglass to add two new bays to which the 132kV double circuit will connect, then construct around 10km of steel lattice towers to Glenmuckloch and at Glenmuckloch establish a 132kV double busbar collector substation to terminate the OHL double circuit.</p>	
<p>Programme</p>	<p>Completion: 30th May 2025</p>
<p>Progress</p>	<p>Design Early Engineering design phase complete.</p> <p>Consenting Public Consultation on overhead line route complete. Scoping Opinion received from Consents Unit. Landowner discussions underway.</p> <p>Detailed Engineering Underway.</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>http://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.asp</p>



<p><u>SPT-RI-176</u> <u>V2.5</u></p>	<p><u>New Cumnock Overload Protection Scheme</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>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 Coynton, 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.</p>	
<p>Programme</p>	<p>Completion: - October 2021</p>
<p>Progress</p>	<p>Design Early engineering design phase - complete</p> <p>Consenting No consents required.</p> <p>Detailed Engineering Ongoing.</p> <p>Tendering Commenced – design and install contract awarded. Panel manufacture pending.</p> <p>Construction Still to be commenced.</p> <p>Commissioning/Close Out Still to be commenced.</p> <p>Link to related info</p> <p>http://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.asp</p>



<p><u>SPT-RI-177</u> <u>V2.4</u></p>	<p><u>Glenglass Overload Protection Scheme</u></p>
<p>OVERVIEW OF WORKS</p> <p>To utilise the non-firm capacity at New Cumnock, Glenglass and the 132kV network in South West Scotland an overload protection scheme is required at Glenglass substation to monitor loading at Glenglass and receive intertrip signals from New Cumnock to prevent any overloading on the transmission system. On the receipt of a local overload signal or a remote intertrip signal from New Cumnock, the scheme will trip generators in a pre-determined sequence by opening the relevant circuit breaker.</p> <p>Stage 1 The transformer overload protection will be required first with currently a proposed delivery date of January 2021 to align with the Twentysilling wind farm connection.</p> <p>Stage 2 The 132kV OHL overload protection will be delivered in May 2021, currently aligned with the connection of Sandy Knowe wind farm.</p>	
<p>Programme</p>	<p>Stage 1: April 2020 Stage 2: May 2021</p>
<p>Progress</p>	<p>Design Early engineering design phase complete</p> <p>Consenting No consents required</p> <p>Detailed Engineering Completed</p> <p>Tendering Offers under review for the panel manufacturing and installation</p> <p>Construction Works scheduled from November 2020 to January 2021</p> <p>Commissioning/Close Out January 2021 Link to related info</p> <p>http://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.asp</p>



<p><u>SPT-RI-185</u> <u>V1.5</u></p>	<p><u>Galashiels to Eccles 132kV Overload Protection Scheme</u></p>
<p>OVERVIEW OF WORKS</p> <p>It is proposed to install an Energy Management (Overload Protection) Scheme at Galashiels 132kV substation to monitor the following circuits:</p> <ol style="list-style-type: none"> 1) Galashiels to Eccles No.1 132kV Circuit 2) Galashiels to Eccles No.2 132kV Circuit <p>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.</p>	
<p>Programme</p>	<p>Completion: 31st October 2025</p>
<p>Progress</p>	<p>Design Still to be commenced.</p> <p>Consenting Still to be commenced.</p> <p>Detailed Engineering Still to be commenced.</p> <p>Tendering Still to be commenced.</p> <p>Construction Still to be commenced.</p> <p>Commissioning/Close Out Still to be commenced,</p> <p>Link to related info http://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.asp</p>



<p><u>SPT-RI-191</u> <u>V2.1</u></p>	<p><u>Gretna-Ewe Hill 132kV Reinforcement</u></p>
<p>OVERVIEW OF WORKS</p> <p>The thermal capacity of the 132kV circuit between Gretna 132kV substation and Ewe Hill Wind Farm 132kV Collector Substation (works detailed in SPT-RI-017), will be increased by re-conductoring the 132kV overhead line utilising “Lark” High Temperature Low Sag (HTLS) conductor (~16km), and installing an additional 800mm² Al XLPE 132kV underground cable in parallel with the existing cable (~0.3km), to give a minimum summer continuous rating of 224MVA. This is to accommodate additional generation connecting at the Ewe Hill Wind Farm 132kV Collector Substation.</p>	
<p>Programme</p>	<p>Completion: - October 2022</p>
<p>Progress</p>	<p>Design Early design in progress.</p> <p>Consenting All required servitudes have been concluded. Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced for construction works. Contract for Lark conductor supply and type testing has been placed.</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Completion date October 2022. Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/network_reinforcement_and_modernisation.aspx</p>



<p><u>SPT-RI-196</u> <u>V2.5</u></p>	<p><u>Clyde South 33kV Works and Overload Protection Scheme</u></p>
<p>OVERVIEW OF WORKS At Clyde South substation, the following will be installed: A containerised substation Transformer 33kV incomer circuit breaker (to form a part of a 3-panel board with a 33kV feeder circuit breaker for Whitelaw Brae 'A' Wind Farm and a 33kV feeder circuit breaker for Crookedstane Wind Farm, both of which will be contained within the relevant wind farm TOCOs) 0.05km 2x500mm² Cu XPLE cable from the LV side of SGT1A to the new incomer circuit breaker At Clyde South 275/33kV substation, an overload protection scheme will be installed on the Clyde SGT1A and SGT1B transformers.</p>	
<p>Programme</p>	<p>Completion: - October 2022</p>
<p>Progress</p>	<p>Design Early design well progressed. Earthing study, drainage survey and GPR survey complete Ecological survey on cable route complete.</p> <p>Consenting Negotiation of land rights continues.</p> <p>Detailed Engineering Commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info http://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.asp</p>



<p><u>SPT-RI-198</u> <u>V2.1</u></p>	<p><u>Newton Stewart 132kV Substation Works</u></p>
<p>OVERVIEW OF WORKS</p> <p>At Newton Stewart 132/33kV substation, a second 132/33kV transformer will be installed as part of a separate project to accommodate contracted generation on a firm basis. To enable the transformer installation, substation works are required involving a new 132kV line isolator to connect the second grid transformer onto the existing T2 33kV circuit breaker.</p>	
<p>Programme</p>	<p>Completion: - October 2023</p>
<p>Progress</p>	<p>Design Early design in progress.</p> <p>Consenting Still to be commenced.</p> <p>Detailed Engineering Still to be commenced.</p> <p>Tendering Still to be commenced.</p> <p>Construction Still to be commenced.</p> <p>Commissioning/Close Out. Still to be commenced.</p> <p>Link to related info</p> <p>http://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.asp</p>



<p><u>SPT-RI-200</u> <u>V2.2</u></p>	<p><u>East Coast Phase 2 Reinforcement</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>SP Transmission works associated with SHE Transmission East Coast Phase 2 400kV Reinforcement (reference SHET-RI-093), comprising:</p> <ul style="list-style-type: none"> – Upgrading of the existing Kincardine-Tealing/ Kintore (XL)¹ overhead line route from 275kV 50°C operation to 400kV 65°C operation between Kincardine and the SP Transmission/ SHE Transmission border; and – Installation of 2 x 400/275kV 1100MVA auto-transformers at Kincardine. <p>Note the existing Kincardine-Tealing 275kV and Kincardine-Kintore 275kV circuits may be terminated in a new SHE Transmission substation at Alyth in advance of the works described in this TORI. In this event, reference to Kincardine-Tealing/ Kintore will become Kincardine-Alyth.</p>	
<p>Programme</p>	<p>Completion: - TBC subject to Network Options Assessment (NOA) Process and potential Ofgem Strategic Wider Work (SWW)</p>
<p>Progress</p>	<p>Design Conceptual design has been kicked-off following NOA6 results published</p> <p>Consenting Still to commence - Subject to Network Options Assessment (NOA) Process</p> <p>Detailed Engineering Still to commence - Subject to Network Options Assessment (NOA) Process</p> <p>Tendering Still to commence - Subject to Network Options Assessment (NOA) Process</p> <p>Construction Still to commence - Subject to Network Options Assessment (NOA) Process</p> <p>Commissioning/Close Out Still to commence - Subject to Network Options Assessment (NOA) Process</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/east_coast_400kv_reinforcement_project.aspx</p>



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<p><u>SPT-RI-204</u> <u>V1.2</u></p>	<p><u>Wishaw-Smeaton-Torness-Eccles Overload Protection Scheme</u></p>
<p>OVERVIEW OF WORKS</p> <p>An overload protection scheme is proposed to be installed within the Wishaw – Smeaton – Torness – Eccles 400kV network to protect the system as part of a Category 2 Intertripping Scheme as defined by the Grid Code.</p>	
<p>Programme</p>	<p>Completion: Programme under review – indicative October 2021</p>
<p>Progress</p>	<p>Design Design for tender Complete.</p> <p>Consenting Not required</p> <p>Detailed Engineering Now under way.</p> <p>Tendering Contract awarded.</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<p><u>SPT-RI-205</u> <u>V2.6</u></p>	<p><u>Arecleoch Ext Tee to Chirmorie/Stranoch Wind Farm 132kV Circuit</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>A ~4.7km 132kV overhead line will be installed from the Arecleoch Extension wind farm tee to the Chirmorie/Stranoch junction. The overhead line will use standard Trident with Lark HTLS conductor which has a minimum summer pre-fault continuous rating of 227MVA.</p>	
<p>Programme</p>	<p>Completion: - May 2024</p>
<p>Progress</p>	<p>Design Design freeze reached.</p> <p>Consenting All wayleaves issued and awaiting signature. Simplified notification for S37 submitted.</p> <p>Detailed Engineering In progress</p> <p>Tendering Still to be commenced</p> <p>Construction Pre-construction surveys in progress</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/stranoch_windfarm.aspx https://www.spenergynetworks.co.uk/pages/chirmorie_windfarm_connection_project.aspx </p>



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<p><u>SPT-RI-206</u> <u>V2.1</u></p>	<p><u>Mark Hill SGT3 240MVA</u></p>
<p>OVERVIEW OF WORKS At Mark Hill substation a 275kV switchbay will be installed to control a 275/132kV 240MVA transformer (SGT3). This will connect to a 132kV busbar (B Board) provided for the connection of renewable generation.</p>	
<p>Programme</p>	<p>Completion: - September 2023</p>
<p>Progress</p>	<p>Design Surveys for Mark Hill substation extension completed.</p> <p>Consenting Planning application submitted. .</p> <p>Detailed Engineering In progress</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<p><u>SPT-RI-211</u> <u>V2.4</u></p>	<p><u>Holm Hill Switching Station to Lorg Wind Farm Junction 132kV Circuit</u></p>
<p>OVERVIEW OF WORKS</p> <p>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.</p> <p>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.</p>	
<p>Programme</p>	<p>Completion: - April 2024</p>
<p>Progress</p>	<p>Design Early design in progress. OHL route design in progress. Holm Hill switching station design in progress.</p> <p>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.</p> <p>Detailed Engineering Commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



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<u>SPT-RI-213</u> <u>V1.2</u>	<u>New Cumnock 275/132kV Transformer SGT2B</u>
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: - Programme Under Review – Indicative September 2023
Progress	Design Early design in progress Consenting Not Applicable Detailed Engineering Ongoing Tendering Contract awarded and supplier engaged for 240 MVA transformer – detailed design of this unit ongoing. Other tender packs still to be issued. Construction Still to be commenced Commissioning/Close Out Still to be commenced Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx



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<u>SPT-RI-214</u> <u>V1.0</u>	<u>ZS Route Overhead Line Upgrading Works (Smeaton – Fallago)</u>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>The overhead line conductor system on the existing 31.1km 400,000 Volt circuit from Smeaton to Fallago (ZS route) will be uprated to achieve an increased thermal rating.</p> <p>The existing ZS 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 85oC.</p> <p>These works will not modify the prevailing circuit configuration.</p>	
Programme	Completion: - April 2024
Progress	<p>Design Early design in progress</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info http://www.spenergynetworks.co.uk/pages/network_reinforcement_and_modernisation.asp </p>



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<p><u>SPT-RI-215</u> <u>V1.0</u></p>	<p><u>Wishaw 400kV GIS Substation Reconfiguration</u></p>
<p>OVERVIEW OF WORKS Terminate the existing Strathaven-Torness 400kV circuit in Wishaw 400kV Substation and install a 400kV bus section circuit breaker at Wishaw 400kV Substation.</p>	
<p>Programme</p>	<p>Completion: - April 2024</p>
<p>Progress</p>	<p>Design Early design in progress</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<u>SPT-RI-216</u> <u>V2.3</u>	<u>Dunbar 132kV Line Isolators</u>
<p align="center">OVERVIEW OF WORKS</p> <p>Establishment and installation of two 132kV line isolators at Dunbar GSP. All associated civil, miscellaneous and minor works.</p>	
Programme	<p>Complete</p>
Progress	<p>Design Complete</p> <p>Consenting Planning application approved.</p> <p>Detailed Engineering Complete</p> <p>Tendering Civil awarded. BoP awarded.</p> <p>132kV Cable supply Awarded and complete 132kV Cable installation, Awarded and complete</p> <p>Construction Civil works complete BoP works started: Both circuits complete</p> <p>Commissioning/Close Out: both circuits complete</p> <p>Link to related info http://www.spenergynetworks.co.uk/pages/network_reinforcement_and_modernisation.asp </p>



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<p><u>SPT-RI-218</u> <u>V2.1</u></p>	<p><u>Coalburn 132kV Bus Coupler Auto-Close Scheme</u></p>
<p>OVERVIEW OF WORKS</p> <p>An auto-close scheme will be installed, at Coalburn 132kV substation, on the 132kV bus-coupler Circuit Breaker (CB) which couples the Main 1 and Reserve 132kV busbars (CB 1030). Following installation of the auto-close scheme, the bus coupler CB 1030 will be normally open to split the 132kV busbars into two discrete sections (Main 1 and Main2/Reserve), supplied by different supergrid transformers. This will maintain the 132kV fault level within design limits on each section of 132kV busbar, and allow additional generation to connect.</p>	
<p>Programme</p>	<p>Completion: - April 2021</p>
<p>Progress</p>	<p>Design Complete</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Complete</p> <p>Tendering Complete.</p> <p>Construction Commenced in March</p> <p>Commissioning/Close Out Planned for 2nd week in April 2021</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-221</u> <u>V2.0</u></p>	<p><u>Kendoon to Glenlee 132kV reinforcements</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>The works in this reinforcement entails the extension of the L7 high capacity (twin UPAS) 132kV double circuit that runs between New Cumnock substation and the Margree Tee off in South West Scotland to Glenlee substation. This will enable the increase of transfer capability from the Galloway group to the wider supergrid system at New Cumnock. The transfer capability of the group is currently limited by the single 132kV Lynx circuit between Kendoon and Tongland. At Glenlee the substation will need to be extended to modify the configuration of the substation from a four to a six mesh corner arrangement to allow the termination of the new high capacity double circuit overhead line from New Cumnock. One side of the circuit will also be turned into Kendoon to maintain connectivity at the substation.</p>	
<p>Programme</p>	<p>Completion: - September 2024</p>
<p>Progress</p>	<p>Design Tender design is ongoing.</p> <p>Consenting Glenlee Planning Consent received August 2020 OHL Section 37 Planning Consent application submitted and published Q3 2020. Council committee meeting is scheduled for 14 Apr 2021 where it is expected that the application will be discussed.</p> <p>Detailed Engineering Underway</p> <p>Tendering</p> <p><u>Glenlee:</u> Civil Works Award – Oct 2021 Balance of Plant (BoP) Award – Dec 2021</p> <p><u>Kendoon:</u> Civil Works – May 2023 Balance of Plant (BoP) – Mar 2023</p> <p>OHL (Combined purchase with TORI 222) – Jul 22</p> <p>Construction Commenced in Q2 2020 – pre-enabling works (to divert circuit</p>



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	<p>and create permanent access) outages are ongoing and on-track to complete works by end of May 21. Enabling works Contract awarded (to George Leslie) working on discharge of planning conditions following receipt of local planning consent.</p> <p>Cable Works – More than 50% completed in Summer 20. Remaining works planned for Autumn 21</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/dumfries_galloway_strategic_reinforcement.aspx</p>
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<u>SPT-RI-222</u> <u>V2.1</u>	<u>Glenlee to Tongland 132kV Modernisation</u>
OVERVIEW OF WORKS	
<p>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.</p>	
Programme	Completion: - September 2025
Progress	<p>Design Tender design in progress</p> <p>Consenting OHL Section 37 Planning Consent application submitted and published Q3 2020. Council committee meeting is scheduled for 14 Apr 2021 where it is expected that the application will be discussed.</p> <p>Detailed Engineering Underway.</p> <p>Tendering</p>



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	<p><u>Tongland:</u> Civil Works – Sep 23 Balance of Plant (BoP) – Dec 23</p> <p>OHL (Combined purchase with TORI 221) – Jul 22</p> <p>132kV OHL Trident Wood Poles (combined purchase with TORI 221) Contract award – Jun 22</p> <p>Conductor Supply / OPGW – Nov 22</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/dumfries_galloway_strategic_reinforcement.aspx</p>
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<p><u>SPT-RI-223</u> <u>V1.1</u></p>	<p><u>Glenlee to Newton Stewart Reconductoring</u></p>
<p>OVERVIEW OF WORKS</p> <p>The existing No.1 and No.2 132kV circuits between Glenlee and Newton Stewart substations are on a double circuit tower line (~ 30km, BG route). The overhead line circuits are single 175mm² ACSR with a pre-fault summer rating of 89MVA.</p> <p>To facilitate increasing levels of generation at Glenluce and Newton Stewart GSP, it is proposed to reconductor BG route with High Temperature Low Sag conductor (HTLS) to provide a minimum summer pre-fault continuous rating of 250MVA.</p>	
<p>Programme</p>	<p>Completion: - Q3 2025 Customer engagement complete for all impacted parties.</p>
<p>Progress</p>	<p>Design Early design in progress</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/dumfries_galloway_strategic_reinforcement.aspx</p>



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<p><u>SPT-RI-224</u> <u>V1.0</u></p>	<p><u>Coylton SGT1(2) Reinforcement</u></p>
<p>OVERVIEW OF WORKS At Coylton substation, the existing SGT1 and SGT2 275/132kV 120MVA Auto-transformers will be replaced (on line) with 240MVA units.</p>	
<p>Programme</p>	<p>Completion: - August 2022</p>
<p>Progress</p>	<p>Design Early design in progress</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering SCA signed off and approved with detail engineering commenced</p> <p>Tendering Transformer have been ordered and are in production.</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-226</u> <u>V2.2</u></p>	<p><u>275/132kV Elvanfoot Transformer</u></p>
<p>OVERVIEW OF WORKS A new 275/132kV 360MVA transformer shall be installed at Elvanfoot substation. This will create a new 132kV busbar at Elvanfoot, to allow new generators to connect.</p>	
<p>Programme</p>	<p>Completion: - October 2022</p>
<p>Progress</p>	<p>Design Design in progress</p> <p>Consenting In progress, planning application information being prepared.</p> <p>Detailed Engineering Commenced</p> <p>Tendering Transformer order placed.</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<p><u>SPT-RI-227</u> <u>V2.0</u></p>	<p><u>Chapelcross – Harker 132kV Uprating</u></p>
<p>OVERVIEW OF WORKS</p> <p>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.</p> <p>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.</p> <p>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.</p>	
<p>Programme</p>	<p>Completion: - November 2024</p>
<p>Progress</p>	<p>Design Early design in progress</p> <p>Consenting Env / Planning consultant contract awarded potential route corridors identified, on-going Environmental / Engineering assessment to identify a preferred corridor</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-229</u> <u>V2.3</u></p>	<p><u>Moffat SGT3</u></p>
<p>OVERVIEW OF WORKS</p> <p>A new 400/132kV 240MVA transformer, and associated 400kV and 132kV circuit breaker bays, shall be installed at Moffat 400/132kV substation to increase the available generation capacity at the 132kV substation.</p>	
<p>Programme</p>	<p>Completion: - August 2025</p>
<p>Progress</p>	<p>Design Early design in progress</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-230</u> <u>V2.1</u></p>	<p><u>Gretna to Faw Side WF Tee 132kV Reinforcement</u></p>
<p>OVERVIEW OF WORKS</p> <p>It is proposed to re-profile approximately 36km of the 132kV overhead line existing Gretna to Hawick circuit (AL and V Route), between Gretna and the proposed Faw Side Community Wind Farm 'T' connection. It is proposed to utilise LARK HTLS conductor. NGET own a section of AL and V Route on this circuit and will have to reinforce to match the SPT proposals.</p>	
<p>Programme</p>	<p>Completion: - October 2025</p>
<p>Progress</p>	<p>Design Early design in progress</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-231</u> <u>V2.0</u></p>	<p><u>Elvanfoot to Harker 400kV Circuit Upgrading</u></p>
<p>OVERVIEW OF WORKS</p> <p>In order to maintain the 4.4GW 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.</p>	
<p>Programme</p>	<p>Completion: - TBC subject to Network Options Assessment (NOA), project did not receive a proceed signal from NOA 5</p>
<p>Progress</p>	<p>Design Design not kicked off yet.</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<p><u>SPT-RI-232</u> <u>V1.4</u></p>	<p><u>Hopsrig Substation Transformer 132-33kV</u></p>
<p>OVERVIEW OF WORKS A new 132/33kV 90MVA transformer will be installed at Hopsrig collector substation. This will create a new 33kV busbar to allow new generators to connect.</p>	
<p>Programme</p>	<p>Completion: - October 2026</p>
<p>Progress</p>	<p>Design Preliminary Civil Design ongoing. Basic Main Plant layout has been developed for the collector substation.</p> <p>Consenting Planning application being prepared for Submission.</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-233</u> <u>V2.2</u></p>	<p><u>Gretna to Jun V 132kV Circuit Reinforcement</u> <u>(AL Route)</u></p>
<p>OVERVIEW OF WORKS</p> <p>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.</p> <p>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.</p> <p>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.</p>	
<p>Programme</p>	<p>Completion: - October 2023</p>
<p>Progress</p>	<p>Design Early design in progress</p> <p>Consenting N/A</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-234</u> <u>V2.0</u></p>	<p><u>Glenniston to Mossmorran No.2 Cct Reinforcement Works</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>The original scope of works has been revised following the system restudy in the area. The revised scope of works is divided into 2 stages as outlined in the followings. The works are required at Glenniston 132kV substation in order to increase the thermal rating of the equipment:</p> <p>Stage 1 Glenniston 132kV T1 LVDOC Relay, and Glenniston 132kV T2 LVDOC Relay.</p> <p>Stage 2 Replace the 132kV disconnectors 124 and 128 and bus section circuit breaker 120 to achieve a minimum rating of 185MVA.</p>	
<p>Programme</p>	<p>Completion: Complete</p>
<p>Progress</p>	<p>Design Complete</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Complete</p> <p>Tendering Complete</p> <p>Construction Complete</p> <p>Commissioning/Close Out Complete with circuit energised 11th April</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<p><u>SPT-RI-236</u> <u>V2.1</u></p>	<p><u>Glenmuckloch to ZV Route Reinforcements</u></p>
<p>OVERVIEW OF WORKS</p> <p>The works in this TORI extends the 400kV network from the ZV route to Glenmuckloch collector substation. It is proposed to establish a new 400kV substation by turning in the ZV route into a new 400kV substation between Elvanfoot and Coalburn. From the new 400kV substation a new 400kV L8 overhead line will be established to a new 400kV substation at Glenmuckloch. Three 400/132kV 360MVA interbusing transformers will connect the 400kV to the 132kV collector substation at Glenmuckloch.</p>	
<p>Programme</p>	<p>Completion: October 2027</p>
<p>Progress</p>	<p>Design Early design in progress. High level routing options being assessed.</p> <p>Consenting Consenting requirements underway</p> <p>Detailed Engineering Still to commence</p> <p>Tendering Still to commence</p> <p>Construction Still to commence</p> <p>Commissioning/Close Out Still to commence</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<p><u>SPT-RI-237</u> <u>V2.0</u></p>	<p><u>Enoch Hill Collector 132/33 kV substation and associated 132 kV circuit</u></p>
<p>OVERVIEW OF WORKS</p> <p>A 132/33kV substation will be established, adjacent to Enoch Hill wind farm, in East Ayrshire (255265E, 609695N). A new circuit by underground cable 4.4 km in length from Board C, will connect this new substation into a new 132kV bay on Board C, at New Cumnock 132kV substation.</p> <p>This TORI describes the works required for the installation of Enoch Hill Collector 132/33 kV Substation and its associated 132 kV circuit</p> <p>The 132 kV circuit is approximately 5km in length and extend from the Enoch Hill collector substation to New Cumnock.</p>	
<p>Programme</p>	<p>Completion: May 2023</p>
<p>Progress</p>	<p>In early design and development phase</p> <p>Design Early design in progress</p> <p>Consenting Early stages in progress</p> <p>Detailed Engineering Still to commence</p> <p>Tendering Still to commence</p> <p>Construction Still to commence</p> <p>Commissioning/Close Out Still to commence</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-238</u> <u>V2.0</u></p>	<p><u>Cumberhead 132kV</u> <u>Collector Substation</u></p>
<p>OVERVIEW OF WORKS</p> <p>A collector substation is required for the connection of both Cumberhead and Dalquhandy wind farm. The collector substation will require the installation of a 132kV busbar section with two line disconnectors and short sections of underground cable (~0.2km each) to connect into the existing Coalburn to Galawhistle 132kV underground cable.</p> <p>From the 132kV busbar section a 132kV circuit breaker, with associated disconnectors, will be installed and connected to a 132/33kV 120MVA transformer with a shared 33kV busbar section. The works to establish this collector substation will include the construction of the substation platform as well as a control building to house SPT's protection and control equipment.</p>	
<p>Programme</p>	<p>Completion: June 2022</p>
<p>Progress</p>	<p>Design Tender designs complete</p> <p>Consenting HoT's agreed with landowners, legal process now ongoing. Consents to be closed out by end of June.</p> <p>Detailed Engineering VFC design ongoing.</p> <p>Tendering Transformer contract awarded. Civils contract BAFO received Control Building contract BAFO received 132kV Cable ITT issued P&C, Batteries & SCIS tenders bids received.</p> <p>Construction WF Developer has commenced platform construction. SPEN Civils contractor commences July 2021.</p> <p>Commissioning/Close Out Still to commence</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-240</u> <u>V1.2</u></p>	<p><u>Douglas West Wind Farm 132kV Collector Substation</u></p>
<p>OVERVIEW OF WORKS</p> <p>At the Douglas West Wind Farm 132kV substation site, a 132kV air insulated busbar will be installed to facilitate the connection of Douglas West Wind Farm and future connections. This 132kV busbar will be looped into the proposed Coalburn to Middlemuir wind farm 132kV underground cable, utilising two new 132kV underground cable sections (~0.3km each).</p>	
<p>Programme</p>	<p>Completion: April 2021</p>
<p>Progress</p>	<p>Design Complete</p> <p>Consenting Land for substation purchased. Planning Application granted.</p> <p>Detailed Engineering Complete</p> <p>Tendering Complete.</p> <p>Construction Civil works complete. Modular Control Building delivered to site. BoP works progressing. Cable Works ongoing.</p> <p>Commissioning/Close Out Commenced.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-243</u> <u>V2.4</u></p>	<p><u>Devolmoor-Erskine-Braehead Park Circuit LMS</u></p>
<p align="center">OVERVIEW OF WORKS</p> <p>A Load Management Scheme (LMS) is required to manage connections in the Neilston – Devol Moor 132 kV group to prevent overloads on the Devol Moor-Erskine-Braehead Park Circuit. The overload will be managed by the LMS tripping the appropriate non-firm connections.</p>	
<p>Programme</p>	<p>Completion: April 2021</p>
<p>Progress</p>	<p>Early Design Complete</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Underway</p> <p>Tendering Complete</p> <p>Construction Still to commence</p> <p>Commissioning/Close Out Still to commence</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<u>SPT-RI-246</u> <u>V2.1</u>	<u>Denny SGT2</u>
<p align="center">OVERVIEW OF WORKS</p> <p>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.</p>	
Programme	March 2025
Progress	<p>Design Ongoing</p> <p>Consenting Not applicable, all works within Denny 400 / 275kV Substation.</p> <p>Detailed Engineering Still to commence</p> <p>Tendering Still to commence</p> <p>Construction Still to commence</p> <p>Commissioning/Close Out Still to commence</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx </p>



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<u>SPT-RI-251</u> <u>V1.2</u>	<u>Coalburn to Douglas West WF 132kV Cable</u> <u>Reinforcement</u>
<p align="center">OVERVIEW OF WORKS</p> <p>Revised proposal as part of SPT-RI-251 to install a 132kV cable circuit between Coalburn and Douglas North Collector which can take all the contracted generation into the site. This 132kV circuit will not be connected in parallel, as per the previous solution, and will be connected electrically separate so the risks identified previously with regards to cable sharing will no longer be present.</p>	
Programme	May 2024
Progress	<p>Design Proposed cable route surveyed. Additional HDD required to firm up route.</p> <p>Consenting Alternative route with additional HDD. Land required at entrance to Coalburn substation to minimise clash/crossing with existing cables – options to secure land under consideration.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering HDD tender package in progress, trial holes for joint bays being progressed.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-252</u> <u>V1.0</u></p>	<p><u>Fife 132kV Fault Level Reinforcement</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>The following works are required at Mossmorran 132kV substation remove the fault level limitations introduced by the 8 GEC FC1 Circuit Breakers (1983):</p> <ul style="list-style-type: none"> • Replace CB 210 and associated disconnect/earth switch • Replace CB 280 and associated disconnect/earth switch • Replace CB 310 and associated disconnect/earth switch • Replace CB 380 and associated disconnect/earth switch • Replace CB 405 and associated disconnect/earth switch • Replace CB 415 and associated disconnect/earth switch • Replace CB 505 and associated disconnect/earth switch • Replace CB 515 and associated disconnect/earth switch <p>In addition to the above works, the protections on each bay, including remote ends, are to be replaced in line with the new primary plant.</p>	
<p>Programme</p>	<p>June 2022</p>
<p>Progress</p>	<p>Design SCA complete.</p> <p>Consenting N/A permitted development</p> <p>Detailed Engineering Ongoing</p> <p>Tendering Site surveys complete.</p> <p>Construction Main works still to commence, CB 505 & CB 280 have been changed by Transmission Operations.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<u>SPT-RI-253</u> <u>V1.0</u>	<u>Coalburn to Cumberhead WF Collector Substation</u> <u>132kV Cable Reinforcement</u>
<p align="center">OVERVIEW OF WORKS</p> <p>There is an existing 1600mm Al XLPE 132kV cable between Coalburn 132kV substation and Galawhistle WF. The Cumberhead WF 132kV Collector substation will be connected into this cable at a location ~10km from Coalburn. This 132kV cable has a summer continuous rating of 169MVA.</p> <p>It is proposed to install a second 1600mm Al XLPE 132kV cable in parallel with the existing cable between Coalburn and the proposed Cumberhead WF 132kV Collector substation (~10km). A minimum summer continuous rating of 200MVA is required for the circuit (two cables in parallel).</p>	
Programme	Withdrawn
Progress	<p>Design Early design commenced.</p> <p>Consenting Proposed cable route established landowners to be approached.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<u>SPT-RI-254</u> <u>V1.0</u>	<u>AA Route LMS</u>
<p align="center">OVERVIEW OF WORKS</p> <p>A Load Management Scheme (LMS) is required at Bonnybridge 132 kV substation to prevent overload conditions on both the Bonnybridge to Bathgate leg of the Bonnybridge – Bathgate – Drumcross No. 1(2) 132 kV circuit when the adjacent circuit is out of service. The overload will be removed by the LMS scheme managing the appropriate non-firm connections via appropriate LMS outstations. Note that the LMS outstations are to be detailed in separate SPT-RI documents.</p>	
Programme	October 2021
Progress	<p>In early design and development phase</p> <p>Design SCA preparation in-progress</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<u>SPT-RI-255</u> <u>V1.0</u>	<u>Drumcross GSP GT1(2)</u>
<p align="center">OVERVIEW OF WORKS</p> <p>An overload protection (OLP) scheme is required at Drumcross 132/33 kV substation 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.</p>	
Programme	October 2021
Progress	<p>In early design and development phase</p> <p>Design SCA preparation in-progress</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx </p>



<p><u>SPT-RI-260</u> <u>V1.0</u></p>	<p><u>Leven GSP GT1(2) OLP Scheme and LMS Outstation</u></p>
<p align="center">OVERVIEW OF WORKS</p> <p>An overload protection (OLP) scheme is required at Leven 132/33 kV substation 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.</p>	
<p>Programme</p>	<p>April 2021</p>
<p>Progress</p>	<p>Design Underway.</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Underway</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<u>SPT-RI-261</u> <u>V1.0</u>	<u>Cupar-Leven 132 kV Circuits LMS</u>
<p align="center">OVERVIEW OF WORKS</p> <p>A Load Management Scheme (LMS) is required to monitor circuit loadings at: Westfield 132 kV substation to monitor for overload conditions on the Westfield-Cupar-Leven 132 kV circuit. Redhouse 132 kV substation 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.</p>	
Programme	April 2021
Progress	<p>Design Underway</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Underway</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<u>SPT-RI-262</u> <u>V1.0</u>	<u>Redhouse 132 kV Circuits LMS</u>
<p align="center">OVERVIEW OF WORKS</p> <p>A Load Management Scheme (LMS) is required at Redhouse GSP to monitor circuit loadings on: The Redhouse – Glenniston 132 kV Circuit The Redhouse – Westfield 132 kV Circuit</p>	
Programme	April 2021
Progress	<p>Design Still to commence.</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Underway</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<p><u>SPT-RI-263</u> <u>V1.0</u></p>	<p><u>Coalburn SGT4</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>At Coalburn 400/132kV substation, works will be required to extend the compound to facilitate the extension of the 400kV and 132kV double busbars, installation of a fourth supergrid transformer (SGT4), along with the associated switchbays. 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.</p> <p>The diverting of three of the 132kV cable circuits into Coalburn has been allowed for to ensure that the generation is split appropriately across the "A" and "B" 132kV switchboards.</p> <p>These works will provide additional capacity at Coalburn for generation connecting to the associated transmission and distribution network.</p>	
<p>Programme</p>	<p>May 2024</p>
<p>Progress</p>	<p>Design Preliminary design work complete</p> <p>Consenting Engagement with landowners ongoing Planning application submitted.</p> <p>Detailed Engineering Ongoing for bay swap work and platform extension</p> <p>Tendering 132kV cable diversion works tender issued and award being finalised. 132kV bay swap tender issued and award being finalised.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<u>SPT-RI-267</u> <u>V1.0</u>	<u>Eccles 400kV Shunt Compensation</u>
<p align="center">OVERVIEW OF WORKS</p> <p>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.</p>	
Programme	July 2026
Progress	<p>Design Still to commence.</p> <p>Consenting Still to commence.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<p><u>SPT-RI-268</u> <u>V1.0</u></p>	<p><u>Coalburn to Douglas West 132kV cable rating enhancement</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>The cable currently installed between Coalburn 132kV and Douglas West collector substation is an 800mm² AL XLPE (~5km) with its rating limited to 144MVA. The limiting sections for the rating are:</p> <p>i) HDD section at Poniel water– 146MVA limit</p> <p>It is proposed to relay this sections with a larger capacity cable to enhance the thermal ratings on this circuit to 165MVA.</p>	
<p>Programme</p>	<p>October 2021</p>
<p>Progress</p>	<p>Design Scope confirmed</p> <p>Consenting No consents requirements</p> <p>Detailed Engineering Cable design requirements complete</p> <p>Tendering Cable works awarded</p> <p>Construction Cable works ongoing on site since November 2020.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<u>SPT-RI-269</u> <u>V2.2</u>	<u>Bathgate GSP OLP Scheme</u>
<p align="center">OVERVIEW OF WORKS</p> <p>An overload protection (OLP) scheme is required at Bathgate 132/33kV substation 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.</p>	
Programme	November 2021
Progress	<p>Design Underway</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx </p>



<p><u>SPT-RI-274</u> <u>V2.2</u></p>	<p><u>Glenshimmeroch Collector Substation</u></p>
<p>OVERVIEW OF WORKS</p> <p>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).</p>	
<p>Programme</p>	<p>July 2025</p>
<p>Progress</p>	<p>Design Early design works underway.</p> <p>Consenting Still to commence.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<u>SPT-RI-275</u> <u>V2.0</u>	<u>Mark Hill 132kV Bus</u>
<p align="center">OVERVIEW OF WORKS</p> <p>To increase the utilisation of the available capacity at Mark Hill substation it is proposed to create a new 132kV Board by coupling both supergrid transformers SGT2 and SGT3. To achieve this it is proposed to install a 132kV bus section breaker and share the available capacity on both transformers.</p>	
Programme	September 2023
Progress	<p>Design In progress</p> <p>Consenting Planning application submitted</p> <p>Detailed Engineering In progress</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<u>SPT-RI-281</u> <u>V1.0</u>	<u>Glenniston 132/33kV T1(2) GSP LMS</u>
<p align="center">OVERVIEW OF WORKS</p> <p>An overload protection (OLP) scheme is required at Glenniston 132/33 kV substation 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.</p>	
Programme	February 2022
Progress	<p>Design Underway</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Underway</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx </p>



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<u>SPT-RI-282</u> <u>V2.1</u>	<u>Markhill SGT4</u>
<p align="center">OVERVIEW OF WORKS</p> <p>At Mark Hill substation extend the substation to install 275kV switchbay and a fourth supergrid transformer (SGT4). This will connect to a 132kV busbar to provide for the connection of renewable generation.</p>	
Programme	October 2025
Progress	<p>Design In progress.</p> <p>Consenting Planning application submitted</p> <p>Detailed Engineering In progress</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx </p>



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<u>SPT-RI-284</u> <u>V1.1</u>	<u>GEMS</u>
<p align="center">OVERVIEW OF WORKS</p> <p>The Generation Export Management Scheme (GEMS) is an active network management system that protects the SP transmission network in south west Scotland against unacceptable overloads on transmission equipment under intact and depleted system conditions. The GEMS system will instruct directly connected and embedded generation to curtail their output to avoid the overloading of any transmission circuits. The order with which these generators are curtailed will be determined by the System Operator (SO) and GEMS system will receive the order list periodically from the SO.</p>	
Programme	Staged with completion October 2024
Progress	<p>Design Initial engineering design underway.</p> <p>Consenting Not applicable.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx </p>



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<p><u>SPT-RI-286</u> <u>V1.0</u></p>	<p><u>Bonnybridge SGT1(2) Auto Changeover Scheme</u></p>
<p>OVERVIEW OF WORKS</p> <p>An auto-changeover scheme will be installed on the Bonnybridge 275/132kV transformer SGT1 such that SGT1 will remain disconnected but on hot standby in case of a fault on Bonnybridge SGT2, Denny 275/132kV SGT3, or a double circuit fault on the Bonnybridge-Westfield 132kV circuits.</p>	
<p>Programme</p>	<p>November 2022</p>
<p>Progress</p>	<p>Design Preliminary design started.</p> <p>Consenting Not required.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<p><u>SPT-RI-287</u> <u>V1.0</u></p>	<p><u>Cumbernauld GSP OLP scheme</u></p>
<p>OVERVIEW OF WORKS</p> <p>An overload protection (OLP) scheme is required at Cumbernauld 132/33kV substation 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.</p>	
<p>Programme</p>	<p>November 2022</p>
<p>Progress</p>	<p>Design Preliminary design started.</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<u>SPT-RI-288</u> <u>V1.0</u>	<u>Hawick - Galashiels 132kV Reconfiguration</u>																												
OVERVIEW OF WORKS																													
<p>Hawick 132/33kV substation is currently supplied via two 132kV circuits from Gretna 400/132kV substation, with a 132kV circuit to Galashiels normally open at CB 205. With the proposed connection of Faw Side wind farm (250MW) it is proposed to reconfigure Hawick 132kV substation such that Hawick can be supplied from Galashiels and establish the Hawick / Galashiels 132kV circuit No.1 and No.2. Works at Galashiels will be required to terminate the double circuit from Hawick post reconfiguration.</p>																													
<p>At Hawick, it is also proposed to install two new 132kV circuit breakers and a fourth 132kV circuit at Hawick with Poplar conductor:</p>																													
<table><tr><td></td><td colspan="2">Winter</td><td colspan="2">Autumn</td><td colspan="2">Summer</td></tr><tr><td></td><td>Amps</td><td>MVA</td><td>Amps</td><td>MVA</td><td>Amps</td><td>MVA</td></tr><tr><td>Pre-Fault Continuous</td><td>615</td><td>140</td><td>590</td><td>134</td><td>540</td><td>124</td></tr><tr><td>Post-Fault Continuous</td><td>730</td><td>167</td><td>700</td><td>160</td><td>645</td><td>147</td></tr></table>			Winter		Autumn		Summer			Amps	MVA	Amps	MVA	Amps	MVA	Pre-Fault Continuous	615	140	590	134	540	124	Post-Fault Continuous	730	167	700	160	645	147
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Pre-Fault Continuous	615	140	590	134	540	124																							
Post-Fault Continuous	730	167	700	160	645	147																							
<p>The existing circuit breakers at Galashiels are of 600A and 800A. It is also proposed to replace the 600A circuit breakers 120 and 620 with a standard 2000A circuit breaker.</p>																													
Programme	October 2025																												
Progress	<p>Design Early design works underway.</p> <p>Consenting Still to commence.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>																												



<p><u>SPT-RI-289</u> <u>V2.2</u></p>	<p><u>Glenmuckloch Overload Protection Scheme</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>To utilise the non-firm capacity between Glenmuckloch and Glenglass a Load Management Scheme (LMS) is required. This scheme will perform the following:</p> <ol style="list-style-type: none"> 1. Monitor the loading on the 132kV circuits between Glenglass and Glenmuckloch. 2. Interface with the LMS at New Cumnock and Glenglass to receive information regarding overloads on other parts of the 132kV network and New Cumnock Transformers. 3. Interface with local tripping scheme to disconnect generators connected at Glenmuckloch substation. 	
<p>Programme</p>	<p>June 2025</p>
<p>Progress</p>	<p>Design Initial design activities underway.</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<p><u>SPT-RI-290</u> <u>V1.0</u></p>	<p><u>Coalburn to Linnmill No.1 Circuit CSE Compound</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>It is required to establish a 132kV cable sealing end compound on the Coalburn – Linnmill No.1 circuit to create a tee off connection to facilitate the connection of Broken Cross WF.</p> <p>The cable sealing end compound will require busbars and downlead connections onto the Coalburn to Linnmill steel tower circuit as well as busbars connection towards the windfarm. This will require the dismantling off the existing cable sealing end basket on the existing tower.</p>	
<p>Programme</p>	<p>September 2023</p>
<p>Progress</p>	<p>Design Initial design activities underway.</p> <p>Consenting Consenting activities commenced.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>

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<u>SPT-RI-292</u> <u>V2.0</u>	<u>Lorg to Shepherds Rig tee</u>
<p align="center">OVERVIEW OF WORKS</p> <p>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.</p>	
Programme	April 2025
Progress	<p>Design Early design in progress. OHL route design in progress. Holm Hill switching station design in progress.</p> <p>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.</p> <p>Detailed Engineering Commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



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<u>SPT-RI-293</u> <u>V2.0</u>	<u>Carrick 275kV substation</u>
<p align="center">OVERVIEW OF WORKS</p> <p>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.</p>	
Programme	July 2025
Progress	<p>Design In progress</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



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<p><u>SPT-RI-294</u> <u>V2.1</u></p>	<p><u>Ewe Hill – Hopsrig collector substations 132kV</u> <u>circuit</u></p>
<p align="center">OVERVIEW OF WORKS</p> <p>An optimised solution has been identified to connect Hopsrig, Loganhead and Crossdykes Extension wind farms. This optimised solution will establish a new 132kV collector substation at Hopsrig wind farm where Hopsrig wind farm will be connected (via a 33kV PoC). At the Hopsrig collector substation, an individual PoC at 33kV will also be provided for Loganhead and Crossdykes Extension wind farms.</p> <p>To provide connectivity between the existing Ewe Hill collector substation and the Hopsrig collector substation, it is proposed to install a new 132kV overhead line circuit between Ewe Hill and Hopsrig collector substations. The circuit will utilise Poplar conductor operating at 90°C.</p>	
<p>Programme</p>	<p>October 2026</p>
<p>Progress</p>	<p>Design OHL route finalised</p> <p>Consenting OHL is confirmed as Non-EIA. Section 37 application being prepared</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<u>SPT-RI-295</u> <u>V1.0</u>	<u>Newton Stewart GSP GT1(2) OLP & LMS</u>
<p align="center">OVERVIEW OF WORKS</p> <p>An overload protection (OLP) scheme is required at Newton Stewart 132/33 kV substation 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.</p>	
Programme	May 2025
Progress	<p>Design Still to commence.</p> <p>Consenting Not Applicable</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisati_on_and_reinforcement.aspx </p>



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<p><u>SPT-RI-296</u> <u>V2.0</u></p>	<p><u>Glenshimmeroch Collector Substation 132kV OHL</u> <u>Upgrading</u></p>
<p align="center">OVERVIEW OF WORKS</p> <p>It is proposed to upgrade a section of the overhead line between the proposed Glenshimmeroch collector substation to the cable end on the New Cumnock 132kV circuit. This is approximately 11km. This will be achieved by replacing the existing UPAS conductor with LARK conductor on the existing wood pole system.</p>	
<p>Programme</p>	<p>July 2025</p>
<p>Progress</p>	<p>Design Still to commence.</p> <p>Consenting Still to commence.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<u>SPT-RI-298</u> <u>V1.0</u>	<u>Chapelcross to Gretna OHL Reinforcement</u>												
OVERVIEW OF WORKS													
<p>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.</p> <p>The proposal is to reconductor the existing circuit with AAAC "Sycamore" conductor. This will give a summer pre-fault rating of 150MVA resulting in no overloads on the circuit.</p> <p>It has been evaluated that the cable sections out of both Gretna and Chapelcross 132kV substations should be suitable to carry this increased loading therefore only the OHL conductors require to be replaced.</p>													
<p>The table below details the pre-fault ratings of "Sycamore" conductor across the three seasonal periods.</p>													
	<table><tr><th></th><th>Winter</th><th>Spring/Autumn</th><th>Summer</th></tr><tr><th></th><th>MVA</th><th>MVA</th><th>MVA</th></tr><tr><td>Pre-Fault Continuous</td><td>196</td><td>189</td><td>176</td></tr></table>		Winter	Spring/Autumn	Summer		MVA	MVA	MVA	Pre-Fault Continuous	196	189	176
	Winter	Spring/Autumn	Summer										
	MVA	MVA	MVA										
Pre-Fault Continuous	196	189	176										
Programme	Oct 2027												
Progress	<p>Design Early design in progress.</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>												



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<p><u>SPT-RI-300</u> <u>V1.0</u></p>	<p><u>Douglas North Collector 132/33kV Transformer</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>It is required to establish a 132/33kV 120MVA transformer at Douglas North Collector substation for the purposes of connecting Douglas West Ext WF and Hagshaw Hill Phase 2 WF. The 120MVA transformer to be installed will be in place of the 90MVA and 60MVA units which were included in the original contracts for the connections.</p> <p>The installation of a 33kV indoor circuit breaker is required given that only an indoor solution can be accommodated within the substation footprint.</p>	
<p>Programme</p>	<p>July 2024</p>
<p>Progress</p>	<p>Design Initial design engineering commenced.</p> <p>Consenting Initial approach for securing construction compound started. No Substation extension required to Douglas North.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence – ITT for transformer planned Q3 2021</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<u>SPT-RI-301</u> <u>V1.0</u>	<u>Mark Hill to Arecleoch Ext Tee 132kV Circuit</u>
<p align="center">OVERVIEW OF WORKS</p> <p>At Mark Hill 132kV substation a 132kV switch bay will be installed. From this a 132kV circuit, consisting of 0.5 km of underground cable and ~7.5km of 132kV overhead line (HTLS 'Eagle' conductor), will be installed to the tee point with Arecleoch Extension wind farm.</p>	
Programme	September 2023
Progress	<p>Consenting Simplified notification submitted</p> <p>Detailed Engineering In progress</p> <p>Tendering Still to be commenced</p> <p>Construction Pre-construction surveys in progress</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/stranoch_windfarm.aspx https://www.spenergynetworks.co.uk/pages/chirmorie_windfarm_connection_project.aspx </p>



<p><u>SPT-RI-302</u> <u>V1.0</u></p>	<p><u>Glenglass 132kV substation</u></p>
<p>OVERVIEW OF WORKS</p> <p>To enable the connection of generation in the Glenglass area and extend the 132kV network to Glenmuckloch a new 132kV substation is required in Glenglass. The new substation will be a double busbar 132kV GIS substation with a bus coupler and sized for eight feeder circuits. Also, to maximise the network capabilities the 132kV circuits between Glenglass and Blackhill are limited by cables at Blackhill substation. These cables will need to be uprated to match the 132kV Blackhill to Glenglass OHL ratings.</p>	
<p>Programme</p>	<p>April 2024</p>
<p>Progress</p>	<p>Design Surveys and pre-engineering studies started. Topographical survey complete.</p> <p>Consenting Still to commence.</p> <p>Detailed Engineering Electrical Layout started.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<u>SPT-RI-303</u> <u>V1.0</u>	<u>East Coast B6 Onshore Reinforcement</u>
<p align="center">OVERVIEW OF WORKS</p> <p>Installation of a new 400kV double circuit overhead line, of approximately 185km, between the Torness area (Branxton 400kV substation) in South East Scotland, and Lackenby in North East England.</p> <p>These works are subject to the NOA process, scope, costs and programme are subject to review and change.</p>	
Programme	November 2036
Progress	<p>Design Still to commence.</p> <p>Consenting Still to commence.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



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<u>SPT-RI-304</u> <u>V2.0</u>	<u>Smeaton 400/275kV 2nd Supergrid</u>
<p align="center">OVERVIEW OF WORKS</p> <p>At Smeaton substation replace the existing 400/275kV 1000MVA transformer (SGT2) with a new 400/275kV 1300MVA one. This uprating is required to allow the connection of offshore generation in the east Lothian area.</p>	
Programme	October 2031
Progress	<p>Design Still to commence.</p> <p>Consenting Still to commence.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx </p>



<u>SPT-RI-305</u> <u>V1.0</u>	<u>Branxton South 400kV GIS Substation</u>
<p align="center">OVERVIEW OF WORKS</p> <p>A new 400kV double busbar substation, utilising Gas Insulated Switchgear (GIS), will be established along the proposed Branxton/Torness to Lackenby 400kV AC onshore reinforcements. This new substation, known for the purposes of this TO Reinforcement Instruction as 'Branxton South 400kV Substation', and associated plant and apparatus, will provide five Transmission Interface Points to which the Seagreen Phase 3 offshore transmission system assets will connect.</p>	
Programme	November 2036
Progress	<p>Design Still to commence.</p> <p>Consenting Still to commence.</p> <p>Detailed Engineering Still to commence.</p> <p>Tendering Still to commence.</p> <p>Construction Still to commence.</p> <p>Commissioning/Close Out Still to commence.</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/substation_modernisation_and_reinforcement.aspx</p>



<p><u>SPT-RI-306</u> <u>V1.0</u></p>	<p><u>Moffat 132kV Fault Level Mitigation Bus Section</u> <u>Circuit Breaker</u></p>
<p align="center">OVERVIEW OF WORKS</p> <p>At Moffat 132kV substation it is required to extend the existing compound to accommodate the connection of further generation into the site. The compound shall be extended with the existing 132kV busbars being extended into this area. The installation of a new 132kV bus section circuit breaker will be required to alleviate exceeding the fault level design limits at the site.</p>	
<p>Programme</p>	<p>August 2025</p>
<p>Progress</p>	<p>Design in progress</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



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<u>SPT-RI-1507</u> <u>V2.0</u>	<u>Holmhill 132kV Substation</u>
<p align="center">OVERVIEW OF WORKS</p> <p>At an appropriate point next to the DE route establish a 132kV substation (Holmhill 132kV substation) by teeing into the proposed future New Cumnock to Glenlee 132kV circuit. The substation will consist of a 132kV busbar to which wind farm circuits will connect to.</p>	
Programme	April 2025
Progress	<p>Design Still to be commenced</p> <p>Consenting Commenced. Consent for Kendoon North switching station in progress.</p> <p>Detailed Engineering Commenced Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx </p>

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Print in black and white and only if necessary.

<u>SPT-RI-1551</u> <u>V2.0</u>	<u>Spango Valley GSP GT1(2)</u>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>The directional overcurrent relay on Spango Valley GT1 and GT2 will inhibit reverse power flow over 46MVA. Therefore if one transformer is out of service, the other would trip out for reverse power flow over 46MVA. Embedded generation at Spango Valley has reached 49.9MW so action is needed to avoid the transformers tripping.</p> <p>The LVDOC relay protecting GT1 and GT2 at Spango Valley will need to be modified or replaced to allow for reverse power flow. The modification is required to allow full reverse power flow. Works will include removal of the directional element and adding in an additional intertrip.</p>	
Programme	April 2024
Progress	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



<u>SPT-RI-1560</u> <u>V1.0</u>	<u>Denny-Braco West Upgrading</u>
<p align="center">OVERVIEW OF WORKS</p> <p>It is proposed to upgrade the existing Denny-Braco West 275kV circuit to 400kV operation by transferring the circuit from its current bay in Denny 275kV substation to a new bay in Denny 400kV substation.</p>	
Programme	October 2029
Progress	<p>Design Early Engineering Design complete, detailed design still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/network_reinforcement_and_modernisation.aspx</p>



<u>SPT-RI-1566</u> <u>V1.0</u>	<u>Hunterston East to Ayrshire 400kV</u> <u>Switchgear/Cable</u>
<p align="center">OVERVIEW OF WORKS</p> <p>To facilitate the connection of the Hunterston Battery Storage Facility and the Ayrshire Grid Services Facility at Hunterston East 400kV GIS substation, it is proposed to extend the GIS double busbar and install a new 400kV switchbay, install approximately 900m of 400kV underground cable from the Hunterston East 400kV GIS substation to a new SPT collector substation (Ayrshire Grid 400kV collector substation). At the collector substation, a new outdoor 400kV busbar and three isolators shall be installed.</p>	
Programme	March 2024
Progress	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



<p><u>SPT-RI-1576</u> <u>V1.1</u></p>	<p><u>Cupar GSP GT1(2) OLP Scheme and LMS Outstation</u></p>
<p style="text-align: center;">OVERVIEW OF WORKS</p> <p>An overload protection (OLP) scheme is required at Cupar 132/33 kV substation 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.</p> <p>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. This SPT OLP scheme will be required to transfer the following signals to the DNO (SPD):</p> <ul style="list-style-type: none"> • A Stage 1 Signal at 95% of the transformer rating for an export Condition *3 • A Stage 1 Signal at 95% of the transformer rating for an import Condition *4 • A Stage 2 Signal at 100% of the transformer rating for an export Condition • A Stage 2 Signal at 100% of the transformer rating for an import Condition • A Stage 3 Signal at 120% of the transformer rating for an export Condition • A Stage 3 Signal at 120% of the transformer rating for an import Condition <p>An LMS outstation is required to interface with Load Management Schemes (LMS) on the wider network. This will allow any signals initiated by a wider network LMS to be transferred to the DNO (SPD) connected embedded generation.</p>	
<p>Programme</p>	<p>October 2022</p>
<p>Progress</p>	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



<u>SPT-RI-1577</u> <u>V2.1</u>	<u>Cupar GSP LV Protection Modifications</u>
<p align="center">OVERVIEW OF WORKS</p> <p>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 LVDOC relay which utilises a voltage-controlled characteristic such that reverse power flow is only limited by the rating of the transformer (including emergency ratings).</p>	
Programme	October 2022
Progress	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



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<u>SPT-RI-1659</u> <u>V2.0</u>	<u>Bathgate to Bonnybridge 132kV No.1 and No.2</u> <u>Cable Uprating</u>
<p align="center">OVERVIEW OF WORKS</p> <p>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.</p>	
Programme	September 2025
Progress	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/network_reinforcement_and_modernisation.aspx</p>



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<u>SPT-RI-1741</u> <u>V2.0</u>	<u>Neilston Supergrid Transformers Auto Changeover</u> <u>Scheme</u>
<p align="center">OVERVIEW OF WORKS</p> <p>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.</p>	
Programme	July 2024
Progress	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



<p><u>SPT-RI-1742</u> <u>V1.0</u></p>	<p><u>Cockenzie load management scheme (Cat 2)</u></p>
<p>OVERVIEW OF WORKS</p> <p>An overload protection scheme is proposed to be installed within the Cockenzie – Smeaton – Kaimes – Eccles 275kV and 400kV network in order to protect the system in compliant with Category 2 Intertripping Scheme as defined by the Grid Code. The intertripping scheme will disconnect the generation within the area following system outage conditions as defined in Section 2.1.</p>	
<p>Programme</p>	<p>October 2023</p>
<p>Progress</p>	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



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<u>SPT-RI-1748</u> <u>V1.0</u>	<u>Devonside GSP Grid T1(2) OLP Scheme and LMS</u> <u>Outstation</u>
<p align="center">OVERVIEW OF WORKS</p> <p>An overload protection (OLP) scheme is required at Devonside 132/33 kV substation in order to prevent overload conditions on the single transformer when the other transformer is out of service.</p>	
Programme	April 2023
Progress	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



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<u>SPT-RI-1791</u> <u>V1.1</u>	<u>Cockenzie to Eccles (ZA route) uprating</u>
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°C.	
Programme	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 Link to related info https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx



<p><u>SPT-RI-1795</u> <u>V1.1</u></p>	<p><u>North East Scotland to North West England</u></p>
<p align="center">OVERVIEW OF WORKS</p> <p>To facilitate additional power flow over the B6 boundary between Scotland and England, given the growing level of renewable generation connecting in Scotland, this project will construct a new 400kV double circuit over the boundary from the South East of Scotland and the North West of England. Further development of the circuit landing points will be assessed, but for study and costing purposed, the existing substations Eccles in the SPT area and Harker in the NGET area has been assumed. The new towers will be of L12 construction, conductored with twin Araucaria.</p>	
<p>Programme</p>	<p>October 2033</p>
<p>Progress</p>	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



<p><u>SPT-RI-1796</u> <u>V2.1</u></p>	<p><u>Cousland 400kV GIS Substation</u></p>
<p align="center">OVERVIEW OF WORKS</p> <p>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.</p>	
<p>Programme</p>	<p>October 2033</p>
<p>Progress</p>	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



<p><u>SPT-RI-1797</u> <u>V1.0</u></p>	<p><u>Strathaven to Elvanfoot 400kV Reinforcement</u></p>
<p align="center">OVERVIEW OF WORKS</p> <p>Due to the increased level of generation connecting on to ZV Route it is necessary to thermally uprate the Strathaven to Elvanfoot 400kV OHL circuits (STHA-COAL, COAL-REDS, REDS-ELVA and STHA-REDS, REDS-ELVA). It is proposed to reconductor the double circuit with twin ACCR "Curlew HTLS" conductor operating at 190°C.</p>	
<p>Programme</p>	<p>October 2030</p>
<p>Progress</p>	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



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<u>SPT-RI-1851</u> <u>V1.0</u>	<u>Benbrack 132kV OHL & SS Works</u>
<p align="center">OVERVIEW OF WORKS</p> <p>A new collector substation will be established at Benbrack wind farm with a 132/33kV 120MVA transformer. An overhead line (Poplar 124MVA) will tee into the New Cumnock – Blackcraig – Glenlee 132kV circuit.</p>	
Programme	May 2023
Progress	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>



<u>SPT-RI-1873</u> <u>V1.0</u>	<u>Eastern HVDC Link 2</u>
<p align="center">OVERVIEW OF WORKS</p> <p>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.</p> <p>These works are subject to NOA process, scope, costs and program are subject to review and change.</p>	
Programme	October 2031
Progress	<p>Design Still to be commenced</p> <p>Consenting Still to be commenced</p> <p>Detailed Engineering Still to be commenced</p> <p>Tendering Still to be commenced</p> <p>Construction Still to be commenced</p> <p>Commissioning/Close Out Still to be commenced</p> <p>Link to related info</p> <p>https://www.spenergynetworks.co.uk/pages/lorg_longburn_wind_farms.aspx</p>

