

Proposed Scheme	CBA Carried Out?	Baseline	Option 1	Option 2	Option 3	Option 4	Option 5
Invergarry T 132kV	No						
Tealing Substation Works	No						
Redmoss-Clayhills 132kV	No						
Beauly - Aigas - Deanie 132kV OHL	No						
Culligran Substation	No						
Harris-Stornoway 132kV OHL	Yes	Offline build of a new 132kV OHL Circuit to current standards between Harris Grid Supply point and Stornoway Grid Supply point, replacing the current single pole trident design to "H" pole trident wood pole structures.	Complete an offline rebuild of a new 132kV OHL circuit between Harris Grid Supply Point and Stornoway Grid Supply Point with new OHL support technology in the form of either composite towers or using Scottish Hydro Electric Transmission's New Suite of Transmission Structures (NESTS) to support the 132kV OHL over the 58km length.				
		<b>Total NPV = -£100.59m</b>	Total NPV = -£120.23m				
Peterhead - Inverugie 132kV OHL	Yes	Earthwire Replacement only	Full Refurbishment Like for Like				
		Total NPV = -£14.69m	<b>Total NPV = -£13.08m</b>				
Willowdale Substation	Yes	Build a new 132kV AIS/GIS solution on the current site	Offline build of a new 132kV AIS/GIS solution on a new site				
		<b>Total NPV = -£42.71m</b>	Total NPV = -£65.72m				
St Fillans Substation Works	Yes	In-Situ Replacement	Offline Build				
		<b>Total NPV = -£6.41m</b>	Total NPV = -£10.62m				
Quoich Tee Substation Works	No						
Beauly Substation Works	No						
Whistlefield - Dunoon 132kV OHL Works	No						
Deanie Substation	No						
North East 400kV Upgrade	Yes	Contracted Position with RIIO-T3 Reconductoring (1st April 2024): Deliver step-up-step-down Peterhead 400kV busbar by 31st October 2023. Transition to North-East 400kV (re-insulation only) completing the Minimum Enabling Works for connection of Western Development Area (WDA) into Blackhillock by 1st April 2024. Reconductor the North-East 400kV circuits in RIIO-T3.	Contracted Position with RIIO-T2 Reconductoring (1st April 2024): Same as Strategy 1 with the advancement of North-East reconductoring by 1st April 2024.	SWW Need (31st October 2026): Same as Strategy 2 but delivering the North-East 400kV by 31st October 2028 to complete works ahead of the connection of Eastern HVDC.	North-East 400kV Opportunity with RIIO-T3 Reconductoring (31st October 2023): Deliver reduced scope Peterhead 400kV busbar and North-East 400kV (re-insulation only) by 31st October 2023. Reconductor the North-East 400kV circuits in RIIO-T3.	North-East 400kV Opportunity with RIIO-T2 Reconductoring (31st October 2023): Same as Strategy 4 with the addition of reconductoring by 31st October 2023.	
		Total NPV = -£255.83m	Total NPV = -£239.94m	Total NPV = -£228.74m	Total NPV = -£288.30m	<b>Total NPV = -£210.00m</b>	
East Coast 400kV Upgrade	Yes	Reinforce the East Coast network, undertaking the necessary 400kV upgrades at Kintore, Fetteresso and Alyth substations. The works will commence in 2021 and complete in 2031 comprising of the following stages: •Re-insulate 400kV to 400kV between 2023 and 2026 •Reconductor to 400kV post 2026	Reinforce the East Coast network, undertaking the necessary 400kV upgrades at Kintore, Fetteresso and Alyth substations. The works will commence in 2021 and complete in 2026 comprising the following stages: •Reconductoring and re-insulation of targeted overhead line sections between Kintore to Kincardine (SPT) between 2021 and 2023. •Reconductoring and re-insulation of remaining overhead line sections between Kintore to Kincardine (SPT) between 2023 and 2026. •Substation works to 400kV operation between 2023 and 2026.				
		Total NPV = -£279.35m	<b>Total NPV = -£264.44m</b>				
St Fergus Mobil	No						
Redmoss Substation Works	No						
Glenshero Connection Works	No						
Glenmoriston Substation	No						
Elmwood - Glenagnes Cable Works	No						
Kilmorack & Aigas Substation	No						

Sloy Substation Works	Yes	Offline build of GT1 and GT3 and GT2 and GT4 in T3. Total NPV = -£48.48m	Offline build of all 4 GT units <b>Total NPV = -£42.90m</b>				
Port Ann - Crossaig 132kV OHL*	Yes	O2 L7 Araucaria (90oC) Total NPV = £472.98m	O3 L7 HTLS Total NPV = £461.05m	O4 L8 Araucaria run at 132kV Total NPV = £525.40m	O5 L8 Twin Rubus run at 132kV Total NPV = £535.03m	O6 L8 Araucaria run at 275kV Total NPV = £509.41m	O7 L8 Twin Rubus run at 275kV Total NPV = £499.81m
Foyers Substation	Yes	Offline build of direct replacement for both 18/275kV transformers within Power Station <b>Total NPV = -£39.61m</b>	Offline build of replacement for both transformers with 18/132kV transformers near the Power Station and 132/275kV transformers at the Substation. Total NPV = -£42.74m				
Broadford Substation Works	No						
Sloy - Windyhill East 132kV OHL Works	Yes	Fittings only with Clearance mitigation works for ESQCR in the Year 2026 (End of T2) and Replacing Phase Conductors (UPAS) in the year 2030 (End of T3) Total NPV = -£22.59m	Full OHL Refurbishment with UPAS Conductors <b>Total NPV = -£22.92m</b>				
Tummel Bridge Substation Works	No						
East Coast 275kV*	Yes	East Coast Onshore Options in isolation Total NPV = £2947.8m	East Coast HVDC/B6 Onshore Options in Isolation <b>Total NPV = -£9000.3m</b>	Grouping of Options: Onshore Incremental and Single HVDC/B6 Onshore Options in Combination Total NPV = £6248.4m	Grouping of Options: Onshore Incremental and Multiple HVDC/B6 Onshore Options in Combination Total NPV = £12635.1m		
Moray West Offshore Windfarm	No						
Keith Substation Works	Yes	Offline 132kV GIS Build <b>Total NPV = -£39.29m</b>	Offline 132kV AIS Build Total NPV = -£66.81m				
Kinardochy Reactive Compensation	Yes	Baseline (275kv) 2030 Total NPV = £1,336.05m	Option1 (400kv) 2030 <b>Total NPV = £1,345.45m</b>	Baseline (275kv) 2040 Total NPV = £1,423.90m	Option1 (400kv) 2040 Total NPV = £1,426.61m	Baseline (275kv) 2050 Total NPV = £1,502.09m	Option1 (400kv) 2050 Total NPV = £1,499.84m
Sloy - Windyhill West 132kV OHL Works	Yes	Fittings only with Clearance mitigation works for ESQCR in the Year 2026 (End of T2) and Replacing Phase Conductors (UPAS) in the year 2030 (End of T3) Total NPV = -£22.67m	Full OHL Refurbishment with UPAS Conductors <b>Total NPV = -£23.12m</b>				
Peterhead Substation	No						
Kintore Substation Works	Yes	RIIO T2 works including the installation of 120MVA GT <b>Total NPV = -£71.53m</b>	RIIO T2 works including the installation of 90MVA GT, replacement of the 90MVA GT with a 120MVA GT only at a later date Total NPV = -£71.52m				
Tealing 275kV Busbar	No						

\*Cost Benefit Analysis has been carried out using Least Worst Regret Analysis

Proposed Scheme	CBA Carried Out?	Baseline	Option 1	Option 2	Option 3	Option 4	Option 5
Invergarry T 132kV	No						
Tealing Substation Works	No						
Redmoss-Clayhills 132kV	No						
Beauly - Aigas - Deanie 132kV OHL	No						
Culligran Substation	No						
Harris-Stornoway 132kV OHL	Yes	Offline build of a new 132kV OHL Circuit to current standards between Harris Grid Supply point and Stornoway Grid Supply point, replacing the current single pole trident design to "H" pole trident wood pole structures.	Complete an offline rebuild of a new 132kV OHL circuit between Harris Grid Supply Point and Stornoway Grid Supply Point with new OHL support technology in the form of either composite towers or using Scottish Hydro Electric Transmission's New Suite of Transmission Structures (NESTS) to support the 132kV OHL over the 58km length.				
		<b>Total NPV = -£100.59m</b>	Total NPV = -£120.23m				
Peterhead - Inverugie 132kV OHL	Yes	Earthwire Replacement only	Full Refurbishment Like for Like				
		Total NPV = -£14.69m	<b>Total NPV = -£13.08m</b>				
Willowdale Substation	Yes	Build a new 132kV AIS/GIS solution on the current site	Offline build of a new 132kV AIS/GIS solution on a new site				
		<b>Total NPV = -£42.71m</b>	Total NPV = -£65.72m				
St Fillans Substation Works	Yes	In-Situ Replacement	Offline Build				
		<b>Total NPV = -£6.41m</b> <b>With MR = £19.24m</b>	Total NPV = -£10.62m With MR = £15.03m				
Quoich Tee Substation Works	No						
Beauly Substation Works	No						
Whistlefield - Dunoon 132kV OHL Works	No						
Deanie Substation	No						
North East 400kV Upgrade	Yes	Contracted Position with RIIO-T3 Reconductoring (1st April 2024): Deliver step-up-step-down Peterhead 400kV busbar by 31st October 2023. Transition to North-East 400kV (re-insulation only) completing the Minimum Enabling Works for connection of Western Development Area (WDA) into Blackhillock by 1st April 2024. Reconductor the North-East 400kV circuits in RIIO-T3.	Contracted Position with RIIO-T2 Reconductoring (1st April 2024): Same as Strategy 1 with the advancement of North-East reconductoring by 1st April 2024.	SWW Need (31st October 2026): Same as Strategy 2 but delivering the North-East 400kV by 31st October 2028 to complete works ahead of the connection of Eastern HVDC.	North-East 400kV Opportunity with RIIO-T3 Reconductoring (31st October 2023): Deliver reduced scope Peterhead 400kV busbar and North-East 400kV (re-insulation only) by 31st October 2023. Reconductor the North-East 400kV circuits in RIIO-T3.	North-East 400kV Opportunity with RIIO-T2 Reconductoring (31st October 2023): Same as Strategy 4 with the addition of reconductoring by 31st October 2023.	
		Total NPV = -£255.83m	Total NPV = -£239.94m	Total NPV = -£228.74m	Total NPV = -£228.30m	<b>Total NPV = -£210.00m</b>	
East Coast 400kV Upgrade	Yes	Reinforce the East Coast network, undertaking the necessary 400kV upgrades at Kintore, Fetteresso and Alyth substations. The works will commence in 2021 and complete in 2031 comprising of the following stages: •Re-insulate 400kV to 400kV between 2023 and 2026 •Reconductor to 400kV post 2026	Reinforce the East Coast network, undertaking the necessary 400kV upgrades at Kintore, Fetteresso and Alyth substations. The works will commence in 2021 and complete in 2026 comprising the following stages: •Reconductoring and re-insulation of targeted overhead line sections between Kintore to Kincardine (SPT) between 2021 and 2023. •Reconductoring and re-insulation of remaining overhead line sections between Kintore to Kincardine (SPT) between 2023 and 2026. •Substation works to 400kV operation between 2023 and 2026.				
		Total NPV = -£279.35m	<b>Total NPV = -£264.44m</b>				
St Fergus Mobil	No						
Redmoss Substation Works	No						
Glenshero Connection Works	No						
Glenmoriston Substation	No						
Elmwood - Glenagnes Cable Works	No						

Kilmorack & Aigas Substation	No						
Sloy Substation Works	Yes	Offline build of GT1 and GT3 and GT2 and GT4 in T3.	Offline build of all 4 GT units				
		Total NPV = -£48.48m With MR = -£16.53m	<b>Total NPV = -£42.90m With MR = -£14.20m</b>				
Port Ann - Crossaig 132kV OHL*	Yes	O2 L7 Araucaria (90oC)	O3 L7 HTLS	O4 L8 Araucaria run at 132kV	O5 L8 Twin Rubus run at 132kV	O6 L8 Araucaria run at 275kV	O7 L8 Twin Rubus run at 275kV
		Total NPV = £472.98m	Total NPV = £461.05m	Total NPV = £525.40m	Total NPV = £535.03m	Total NPV = £509.41m	Total NPV = £499.81m
Foyers Substation	Yes	Offline build of direct replacement for both 18/275kV transformers within Power Station	Offline build of replacement for both transformers with 18/132kV transformers near the Power Station and 132/275kV transformers at the Substation.				
		<b>Total NPV = -£39.61m</b>	Total NPV = -£42.74m				
Broadford Substation Works	No						
Sloy - Windyhill East 132kV OHL Works	Yes	Fittings only with Clearance mitigation works for ESQCR in the Year 2026 (End of T2) and Replacing Phase Conductors (UPAS) in the year 2030 (End of T3)	Full OHL Refurbishment with UPAS Conductors				
		Total NPV = -£22.59m With MR = £116.88m	<b>Total NPV = -£22.92m With MR = -£133.32m</b>				
Tummel Bridge Substation Works	No						
East Coast 275kV*	Yes	East Coast Onshore Options in isolation	East Coast HVDC/B6 Onshore Options in Isolation	Grouping of Options: Onshore Incremental and Single HVDC/B6 Onshore Options in Combination	Grouping of Options: Onshore Incremental and Multiple HVDC/B6 Onshore Options in Combination		
		Total NPV = £2947.8m	<b>Total NPV = -£9000.3m</b>	Total NPV = £6248.4m	Total NPV = £12635.1m		
Moray West Offshore Windfarm	No						
Keith Substation Works	Yes	Offline 132kV GIS Build	Offline 132kV AIS Build				
		<b>Total NPV = -£39.29m With MR = -£14.55m</b>	Total NPV = -£66.81m With MR = -£40.03m				
Kinardochy Reactive Compensation	Yes	Baseline (275kv) 2030	Option1 (400kv) 2030	Baseline (275kv) 2040	Option1 (400kv) 2040	Baseline (275kv) 2050	Option1 (400kv) 2050
		Total NPV = £1,336.05m	<b>Total NPV = £1,345.45m</b>	Total NPV = £1,423.90m	Total NPV = £1,426.61m	Total NPV = £1,502.09m	Total NPV = £1,499.84m
Sloy - Windyhill West 132kV OHL Works	Yes	Fittings only with Clearance mitigation works for ESQCR in the Year 2026 (End of T2) and Replacing Phase Conductors (UPAS) in the year 2030 (End of T3)	Full OHL Refurbishment with UPAS Conductors				
		Total NPV = -£22.67m	<b>Total NPV = -£23.12m</b>				
Peterhead Substation	No						
Kintore Substation Works	Yes	RIIO T2 works including the installation of 120MVA GT	RIIO T2 works including the installation of 90MVA GT, replacement of the 90MVA GT with a 120MVA GT only at a later date				
		<b>Total NPV = -£71.53m With MR = £185.61m</b>	Total NPV = -£71.52m With MR = £185.86m				
Tealing 275kV Busbar	No						

\*Cost Benefit Analysis has been carried out using Least Worst Regret Analysis