

RIIO-T2 PCB CVT Replacement Programme – OFGEM Justification Paper	
Name of Scheme/Programme	RIIO-T2 PCB CVT Replacement Programme
Primary Investment Driver	Asset Health
Scheme reference/mechanism or category	SPNLT20141/ Instrument transformer
Output references/type	NLRT2SP20141 / Non Lead (33kV VT / 132kV VT / 132kV CT / 275kV VT / 275kV CT / 400kV CT / 400kV VT)
Cost	£1.67 mn
Delivery Year	2026
Reporting Table	C0.7 / C2.2a_CI / C2.2a_AP / C2.3 / C2.4b / C2.5a / C2.5
Outputs included in RIIO T1 Business Plan	No

Issue Date	Issue No	Amendment Details
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1 Introduction

PCBs are a group of synthetic chemicals with good dielectric properties and a high breakdown voltage. They are non-flammable and were used as a dielectric and heat transfer fluid where low-flammability was of prime importance. They were commonly used in insulating oil used in electrical apparatus including transformers, high and low voltage capacitors and switchgear etc., manufactured prior to 1987.

PCBs refer to any of the following substances:

- Polychlorinated biphenyls (PCBs)
- Polychlorinated terphenyls (PCTs)
- Monomethyl-dibromo-diphenyl methane
- Monomethyl-dichloro-diphenyl methane
- Monomethyl-tetrachlorodiphenyl methane

PCBs have long been recognised as posing a threat to the environment because of their toxicity, persistence and tendency to bio-accumulate (i.e. to build up in the bodies of animals, particularly at the top of the food chain). Increasingly high levels have been found in the body fats of fish, birds and mammals and have been linked with harmful effects such as liver damage and a reduced ability to fight infection.

The Stockholm Convention on Persistent Organic Pollutants, an international environmental treaty, was signed in 2001 and became effective from May 2004. To meet the provisions stipulated in Part II, Annex A of Stockholm Convention, the European Commission published the Persistent Organic Pollutants (POPs) Regulation (EC No 850/2004) with a recast officially agreed on 19 February 2019.

The revised Persistent Organic Pollutant Regulations came into effect in June 2019 and directly apply in EU countries. These Regulations contain a revised requirement relating to equipment that may contain PCBs:

“Member States shall identify and remove from use equipment (e.g. transformers, capacitors or other receptacles containing liquid stocks) containing more than 0.005% PCBs and volumes greater than 0.05dm³, as soon as possible but no later than 31 December 2025.”

The hard deadline of 31 December 2025 and the volumetric threshold of 0.05 dm³ (0.05L) are the crucial changes from previous practice. Networks had historically been working towards a gradual removal of contaminated equipment (containing more than 0.005 % PCBs) without a hard deadline and targeting equipment with fluid volumes greater than 5L.

Networks companies must now remove all equipment of capacity >0.05 litres that does or may contain PCBs at concentrations >50ppm from the network by the end of 2025.

Accordingly in line with the current legislation, SP Transmission is considering this project to replace Contaminated Equipment (please see section 2) in the RIIO-T2 period.

Please find the units to be replaced in this project:

	11kV	25kV & 33kV	132kV	275kV	400kV
CVT asset addition	2	10	49	47	19
CVT asset removal	2	10	49	47	19
CT asset addition	0	-	26	3	0
CT asset removal	0	-	26	3	0

The scope of other works in the RIIO-T2 business plan will replace Contaminated Equipment and this programme is to complete the removal of the remaining units.

2 Selection criteria:

Contaminated Equipment (CE) is defined as any equipment containing more than 0.05L of fluid that has a concentration of PCBs of more than 0.005 % (50 than 0.05L of fluid that has a concentration of PCBs of more than 0.005 % (50 ppm). It is also required that any equipment manufactured before 1987 and containing >0.05L of fluid be assumed to be CE unless testing has shown that there are no PCBs present or levels are <50ppm. Any piece of equipment without known year of manufacture and containing >0.05L of fluid should be assumed as being CE.

The design of CT and CVT capacitor units manufactured before 1987 in this programme means that they cannot be tested for PCB content causing potentially irreparable damage. Because these cannot be tested to prove that they are not contaminated they must be classified as CE targeted for replacement before the end of 2025.

Please find the list of CVT units identified for replacement in attached annex A.

Certain CT units with known PCB content have also been identified for replacement in accordance with the foregoing criteria.

Please find the list of CT units identified for replacement in attached annex B.

3 Optioneering

Considering the requirement to comply with the regulation, there is no option to delay this investment.

The units have been considered to be replaced on a like for like basis with a PCB free alternate instrument transformer.

4 CBA results

No CBA has been carried out because there is only one possible option viz. replacing these units in RIIO T2 is possible. The minimum solution - simple like-for-like replacement - has been proposed in all cases.

5 Conclusion

In accordance with the relevant regulation regarding the removal of Contaminated Equipment from the network this project proposes to replace the CVT and CT units mentioned in annexes A and B.

- Total cost: £ 1.67 m
- Delivery year: 2026

6 Future Pathways – Net Zero

We have reviewed this project against the criteria set out within the business plan guidance and have assessed that it does not prevent achievement of our Net Zero plans or lead to stranded assets.

7 Outputs included in RIIO T1 Plans

This scheme does not contain any outputs or costs included in the RIIO-T1 business plan.

8 Annexes:

Annex A: Voltage transformer replacement list

Annex B: Current transformer replacement list

8.1 Annex A: Voltage transformer replacement list

Equipment	Description of technical object	Text Model	Substation	Voltage
700266325	COCK275CVTG41Y	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266341	COCK275CVTG31Y	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266343	COCK275CVTG21Y	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266345	COCK275CVTL21R	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266347	COCK275CVTL21Y	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266349	COCK275CVTL21B	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266351	COCK275CVTQ11Y	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266373	COCK275WVTQ61Y	275KV WOUND VT CASCADE	COCKENZIE 275/33kv-275	275
700266375	COCK275CVTL11B	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266377	COCK275CVTL11R	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266379	COCK275CVTL11Y	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266381	COCK275CVTG51Y	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700481832	COCK275CVTL41B	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700481833	COCK275CVTL41Y	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700481834	COCK275CVTL41R	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700481836	COCK275CVTL31Y	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700481838	COCK275CVTL31R	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700481839	COCK275CVTL31B	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266371	COCK275CVTH683Y	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266383	COCK275CVTH583Y	275KV CAPACITOR VT	COCKENZIE 275/33kv-275	275
700266778	COCK400CVTX601R	400KV CAPACITOR VT TRANS	COCKENZIE 400/275kv-400	400
700266784	COCK400CVTX601Y	400KV CAPACITOR VT TRANS	COCKENZIE 400/275kv-400	400
700266785	COCK400CVTX601B	400KV CAPACITOR VT TRANS	COCKENZIE 400/275kv-400	400
700268346	DEVM400CVTX101B	400KV CAPACITOR VT TRANS	DEVOL MOOR 400/132kv-400	400
700268348	DEVM400CVTX201B	400KV CAPACITOR VT TRANS	DEVOL MOOR 400/132kv-400	400
700268350	DEVM400CVTX201Y	400KV CAPACITOR VT TRANS	DEVOL MOOR 400/132kv-400	400
700268354	DEVM400CVTX201R	400KV CAPACITOR VT TRANS	DEVOL MOOR 400/132kv-400	400
700268356	DEVM400CVTX101Y	400KV CAPACITOR VT TRANS	DEVOL MOOR 400/132kv-400	400
700268358	DEVM400CVTX101R	400KV CAPACITOR VT TRANS	DEVOL MOOR 400/132kv-400	400
700269966	EERH275CVTF21R	275KV CAPACITOR VT	EASTERHOUSE 275/33kv-275	275
700269976	EERH275CVTF21Y	275KV CAPACITOR VT	EASTERHOUSE 275/33kv-275	275
700269978	EERH275CVTF21B	275KV CAPACITOR VT	EASTERHOUSE 275/33kv-275	275
700268114	NEIL400CVTH381Y	400KV CAPACITOR VT TRANS	NEILSTON 400/275kv-275	275
700268116	NEIL400CVTX201R	400KV CAPACITOR VT TRANS	NEILSTON 400/275kv-400	400
700268120	NEIL400CVTX201Y	400KV CAPACITOR VT TRANS	NEILSTON 400/275kv-400	400
700268122	NEIL400CVTH281Y	400KV CAPACITOR VT TRANS	NEILSTON 400/275kv-400	400
700268118	NEIL400CVTX201B	400KV CAPACITOR VT TRANS	NEILSTON 400/275kv-400	400
700267718	NEAR275CVTL31B	275KV CAPACITOR VT	NEWARTHILL 275/33kv-275	275
700267720	NEAR275CVTL11B	275KV CAPACITOR VT	NEWARTHILL 275/33kv-275	275
700267726	NEAR275CVTL11Y	275KV CAPACITOR VT	NEWARTHILL 275/33kv-275	275
700267727	NEAR275CVTL11R	275KV CAPACITOR VT	NEWARTHILL 275/33kv-275	275
700267729	NEAR275CVTL31Y	275KV CAPACITOR VT	NEWARTHILL 275/33kv-275	275
700267731	NEAR275CVTL31R	275KV CAPACITOR VT	NEWARTHILL 275/33kv-275	275
700270900	TORN132CVT681Y	132KV CAPACITOR VT	TORNESS 132kv-132	132
700270870	TORN132CVT781Y	132KV CAPACITOR VT	TORNESS 132kv-132	132
700267301	MOSM132WVTGRID 1	33KV GRID VT WOUND INC	MOSSMORRAN 132/33kv-033	33
700267303	MOSM132WVTGRID 2	33KV GRID VT WOUND INC	MOSSMORRAN 132/33kv-033	33
700267232	MOSH132CVTGRID 1	GRID VT 11KV 33KV INC	MOSSMORRAN SHELL	11
700267238	MOSH132CVTGRID 2	GRID VT 11KV 33KV INC	MOSSMORRAN SHELL	11
700271012	GALA132CVT101Y	VLS	GALASHIELS 132/33kv-132	132
700271016	GALA132WVT401R	VLS	GALASHIELS 132/33kv-132	132
700271018	GALA132WVT401Y	VLS	GALASHIELS 132/33kv-132	132
700271020	GALA132WVT401B	VLS	GALASHIELS 132/33kv-132	132
700270995	GALA132CVT303324Y	132KV CAPACITOR VT	GALASHIELS 132/33kv-132	132
700271022	GALA132CVT303324B	132KV CAPACITOR VT	GALASHIELS 132/33kv-132	132
700271034	GALA132CVT303324R	132KV CAPACITOR VT	GALASHIELS 132/33kv-132	132
700270999	GALA132CVT603R	132KV CAPACITOR VT	GALASHIELS 132/33kv-132	132
700271000	GALA132CVT603Y	132KV CAPACITOR VT	GALASHIELS 132/33kv-132	132
700271002	GALA132CVT603B	132KV CAPACITOR VT	GALASHIELS 132/33kv-132	132
700271539	WFIE132CVT481Y	132KV CAPACITOR VT	WESTFIELD 132/33kv-132	132
700271505	WFIE132CVT351Y	132KV CAPACITOR VT	WESTFIELD 132/33kv-132	132

700271547	WFIE132CVT581Y	132KV CAPACITOR VT	WESTFIELD 132/33kv-132	132
700271537	WFIE132CVT251Y	132KV CAPACITOR VT	WESTFIELD 132/33kv-132	132
700271497	WFIE132CVT301B	132KV CAPACITOR VT	WESTFIELD 132/33kv-132	132
700271499	WFIE132CVT301Y	132KV CAPACITOR VT	WESTFIELD 132/33kv-132	132
700271543	WFIE132CVT301R	132KV CAPACITOR VT	WESTFIELD 132/33kv-132	132
700271501	WFIE132CVT201B	132KV CAPACITOR VT	WESTFIELD 132/33kv-132	132
700271503	WFIE132CVT201R	132KV CAPACITOR VT	WESTFIELD 132/33kv-132	132
700271541	WFIE132CVT201Y	132KV CAPACITOR VT	WESTFIELD 132/33kv-132	132
700264486	BONN275CVTL21R	275KV CAPACITOR VT	BONNYBRIDGE 275kv-275	275
700264490	BONN275CVTL21B	275KV CAPACITOR VT	BONNYBRIDGE 275kv-275	275
700264492	BONN275CVTL21Y	275KV CAPACITOR VT	BONNYBRIDGE 275kv-275	275
700265053	CATY025CVTGRID1C	VEF 52-01 25KV TRANS	CARNTYNE RailwaySub-025	25
700265055	CATY025CVTGRID2C	VEF 52-01 25KV TRANS	CARNTYNE RailwaySub-025	25
700266851	COYL132CVT101R	132KV CAPACITOR VT	COYLTON 132/33kv-132	132
700266853	COYL132CVT101B	132KV CAPACITOR VT	COYLTON 132/33kv-132	132
700266855	COYL132CVT101Y	132KV CAPACITOR VT	COYLTON 132/33kv-132	132
700268874	DUMF132CVTCTVT101Y	132KV CAPACITOR VT	DUMFRIES 132kv-132	132
700268876	DUMF132WVTWVT201R	VLS	DUMFRIES 132kv-132	132
700268878	DUMF132WVTWVT201B	VLS	DUMFRIES 132kv-132	132
700268886	DUMF132WVTWVT201Y	VLS	DUMFRIES 132kv-132	132
700270213	EKIS275CVTL11B	CCV300	EAST KILBRIDE SOUTH	275
700270215	EKIS275CVTL11Y	CCV300	EAST KILBRIDE SOUTH	275
700270207	EKIS275CVTL11R	CCV300	EAST KILBRIDE SOUTH	275
700269355	ECCF132CVTECS1	33KV GRID VT WOUND INC	ECCLEFECHAN 132kv-132	132
700269357	ECCF132CVTECS2	33KV GRID VT WOUND INC	ECCLEFECHAN 132kv-132	132
700272001	GRMO275WVTSG1BY		GRANGEMOUTH 275/33kv-275	275
700271998	GRMO275WVTSGT2BY		GRANGEMOUTH 275/33kv-275	275
700271989	GRMO275CVTSG2B		GRANGEMOUTH 275/33kv-275	275
700271992	GRMO275CVTSG1B		GRANGEMOUTH 275/33kv-275	275
700457541	INW1132WVT2L3T2	25KV VT WOUND (6YRS)	INNERWICK 132kv-025	25
700264505	KAIM275CVTH21Y	275KV CAPACITOR VT	KAIMES 275/33kv-275	275
700265313	KILS400CVTX101R	400KV CAPACITOR VT TRANS	KILMARNOCK SOUTH 400kv-	400
700265317	KILS400CVTX101B	400KV CAPACITOR VT TRANS	KILMARNOCK SOUTH 400kv-	400
700265319	KILS400CVTX101Y	400KV CAPACITOR VT TRANS	KILMARNOCK SOUTH 400kv-	400
700265461	KILW132CVT201B	132KV CAPACITOR VT	KILWINNING 132/33kv-132	132
700265463	KILW132CVT301Y	132KV CAPACITOR VT	KILWINNING 132/33kv-132	132
700265465	KILW132CVT101Y	132KV CAPACITOR VT	KILWINNING 132/33kv-132	132
700265471	KILW132CVT101B	132KV CAPACITOR VT	KILWINNING 132/33kv-132	132
700265473	KILW132CVT101R	132KV CAPACITOR VT	KILWINNING 132/33kv-132	132
700265475	KILW132CVT301B	132KV CAPACITOR VT	KILWINNING 132/33kv-132	132
700265477	KILW132CVT301R	132KV CAPACITOR VT	KILWINNING 132/33kv-132	132
700265479	KILW132CVT201R	132KV CAPACITOR VT	KILWINNING 132/33kv-132	132
700265485	KILW132CVT201Y	132KV CAPACITOR VT	KILWINNING 132/33kv-132	132
700266960	MAYB132CVT101R	132KV CAPACITOR VT	MAYBOLE 132/33kv-132	132
700266962	MAYB132CVT101B	132KV CAPACITOR VT	MAYBOLE 132/33kv-132	132
700266984	MAYB132CVT101Y	132KV CAPACITOR VT	MAYBOLE 132/33kv-132	132
700268640	RAVE275CVTGRID	33KV GRID VT WOUND	RAVENS CRAIG 275/33kv-033	33
700268642	RAVE275CVTGRID	33KV GRID VT WOUND	RAVENS CRAIG 275/33kv-033	33
700269026	SACO025WVTGRID2C	25KV VT WOUND (6YRS)	SALT COATS 25KV RailwaySub-	25
700269370	SMEA275CVTL31B	275KV CAPACITOR VT	SMEATON 275kv-275	275
700269372	SMEA275CVTL31Y	275KV CAPACITOR VT	SMEATON 275kv-275	275
700269392	SMEA275CVTSGT2H583Y	275KV CAPACITOR VT	SMEATON 275kv-275	275
700269374	SMEA275CVTL31R	275KV CAPACITOR VT	SMEATON 275kv-275	275
700269648	SMEA400CVTX501B	400KV CAPACITOR VT TRANS	SMEATON 400kv-400	400
700269650	SMEA400CVTX501R	400KV CAPACITOR VT TRANS	SMEATON 400kv-400	400
700269652	SMEA400CVTX501Y	400KV CAPACITOR VT TRANS	SMEATON 400kv-400	400
700270473	STLE025WVTGRID1B	VEF 52-01 25KV TRANS	STRATHLEVEN RailwaySub-025	25
700270471	STLE025WVTGRID2B	VEF 52-01 25KV TRANS	STRATHLEVEN RailwaySub-025	25
700270729	TONG132WVTWVT141R	VLS	TONGLAND 132/11kv-132	132
700270736	TONG132WVTWVT141Y	VLS	TONGLAND 132/11kv-132	132
700271426	TULL275CVTY	275KV CAPACITOR VT	TULLIALLAN SealingEnd-275	275
700271428	TULL275CVTR	275KV CAPACITOR VT	TULLIALLAN SealingEnd-275	275
700272414	WHTL132CVT101Y	CPEE 145 VT	WHISTLEFIELD 132/33kv-132	132
700272423	WHTL132CVT111Y	CPEE 145 VT	WHISTLEFIELD 132/33kv-132	132
700272426	WHTL132CVT201Y	CPEE 145 VT	WHISTLEFIELD 132/33kv-132	132
700272429	WHTL132CVT211Y	132KV CAPACITOR VT	WHISTLEFIELD 132/33kv-132	132

8.2 Annex B: Current transformer replacement list

Equipment	Description of technical object	Text Model	Substation	Voltage
700270994	TORN132CTS220/224R	132KV CTS TRANS	TORNESS 132kv-132	132
700270952	TORN132CTS220/224Y	132KV CTS TRANS	TORNESS 132kv-132	132
700270938	TORN132CTS230/234B	132KV CTS TRANS	TORNESS 132kv-132	132
700270942	TORN132CTS230/234R	132KV CTS TRANS	TORNESS 132kv-132	132
700270940	TORN132CTS230/234Y	132KV CTS TRANS	TORNESS 132kv-132	132
700270932	TORN132CTS230/236B	132KV CTS TRANS	TORNESS 132kv-132	132
700270936	TORN132CTS230/236R	132KV CTS TRANS	TORNESS 132kv-132	132
700270934	TORN132CTS230/236Y	132KV CTS TRANS	TORNESS 132kv-132	132
700270950	TORN132CTS220/224B	132KV CTS TRANS	TORNESS 132kv-132	132
700270944	TORN132CTS220/324B	132KV CTS TRANS	TORNESS 132kv-132	132
700270948	TORN132CTS220/324R	275KV CURRENT TX	TORNESS 132kv-132	132
700270946	TORN132CTS220/324Y	132KV CTS TRANS	TORNESS 132kv-132	132
700270996	TORN132CTS330/334B	275KV CURRENT TX	TORNESS 132kv-132	132
700270990	TORN132CTS330/334R	132KV CTS TRANS	TORNESS 132kv-132	132
700270992	TORN132CTS330/334Y	132KV CTS TRANS	TORNESS 132kv-132	132
700270988	TORN132CTS330/336B	132KV CTS TRANS	TORNESS 132kv-132	132
700270916	TORN132CTS330/336R	132KV CTS TRANS	TORNESS 132kv-132	132
700270998	TORN132CTS330/336Y	132KV CTS TRANS	TORNESS 132kv-132	132
700271522	GLNI132CTS301B	132KV CTS TRANS	GLENNISTON 132/33kv-132	132
700271542	GLNI132CTS301R	132KV CTS TRANS	GLENNISTON 132/33kv-132	132
700271524	GLNI132CTS301Y	132KV CTS TRANS	GLENNISTON 132/33kv-132	132
700268914	DUMF132CTSCTS203B	132KV CTS TRANS	DUMFRIES 132kv-132	132
700268910	DUMF132CTSCTS203R	132KV CTS TRANS	DUMFRIES 132kv-132	132
700268912	DUMF132CTSCTS203Y	132KV CTS TRANS	DUMFRIES 132kv-132	132
700270015	STHA275CTSCTSL75B	275KV CURRENT TX	STRATHAVEN 275/33kv-275	275
700270011	STHA275CTSCTSL75R	275KV CURRENT TX	STRATHAVEN 275/33kv-275	275
700270013	STHA275CTSCTSL75Y	275KV CURRENT TX	STRATHAVEN 275/33kv-275	275
700269036	SACO025CTSGRID1C	25KV CT	SALTCOATS 25KV RailwaySub-025	25
700269032	SACO025CTSGRID2C	25KV CT	SALTCOATS 25KV RailwaySub-025	25