Scottish & Southern Electricity Networks

Sloy Substation Works

Engineering Justification Paper

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Engineering Justification Paper

1 Executive Summary

Our paper A Risk Based Approach to Asset Management[1] sets out our approach to network risk and how we subsequently identify assets that require intervention to limit the rise of risk over the RIIO-T2 period.

This paper identifies the need for intervention on the transformers at Sloy. The primary driver for the scheme is the asset condition of the existing transformers.

Following optioneering and detailed analysis, as set out in this paper, the proposed scope of works is;

- Construction of a new site compound near the existing substation at the power station. An offline build of GT1, GT2, GT3 and GT4 at the new site.
- At the new substation install four 132kV circuit breakers, and eight 11kV circuit breakers.
- The existing GT1, GT2, GT3 and GT4 and associated equipment at the existing substation are to be removed.
- Tower and gantry works are required for connection to the OHL, and 11kV cables will be installed to connect to the power station.

This scheme will cost £45.3m and will deliver the following outputs and benefits during the RIIO-T2 period:

- A long-term monetised risk benefit of R£43.7m;
- A reduction of network risk calculated as R£0.8m; see Section 5 for details; and,
- Improved operational flexibility and resilience in line with our goal to aim for 100% transmission network reliability for homes and businesses.

The Sloy substation Works project is not flagged as eligible for early or late competition due to it being under Ofgem's £50m and £100m thresholds respectively.

[1] A Risk Based Approach to Asset Management

Name of Scheme/Programme	Sloy Substation Works
Primary Investment Driver	Asset Health (Non-Load)
Scheme reference/ mechanism or category	SHNLT204
Output references/type	NLRT2SH204
Cost	£45.3m
Delivery Year	RIIO-T2 Period
Reporting Table	C0.7_Non_Load_Master_Data
Outputs included in RIIO T1 Business Plan	No

2 Introduction

This Engineering Justification Paper sets out our plans to undertake refurbishment works of existing assets during the RIIO-T2 period (April 2021 to March 2026). The planned work is at Sloy substation, the location of which is shown in Figure 1 on the next page.

The Engineering Justification Paper is structured as follows:

Section 3: Need

This section provides an explanation of the need for the planned works. It provides evidence of the primary and, where applicable, secondary drivers for undertaking the planned works. Where appropriate it provides background information and/or process outputs that generate or support the need.

Section 4: Optioneering

This section presents all the options considered to address the need that is described in Section 3. Each option considered here is either discounted at this Optioneering stage with supporting reasoning provided or is taken forward for Detailed Analysis in Section 5.

Section 5: Detailed Analysis

This section considers in more detail each of the options taken forward from the Optioneering section. Where appropriate the results of Cost Benefit Analysis are discussed and together with supporting objective and engineering judgement contribute toward the identification of a selected option. The section continues by setting out the costs for the selected option.

Section 6: Conclusion

This section provides summary detail of the selected option. It sets out the scope and outputs, costs and timing of investment and where applicable other key supporting information.

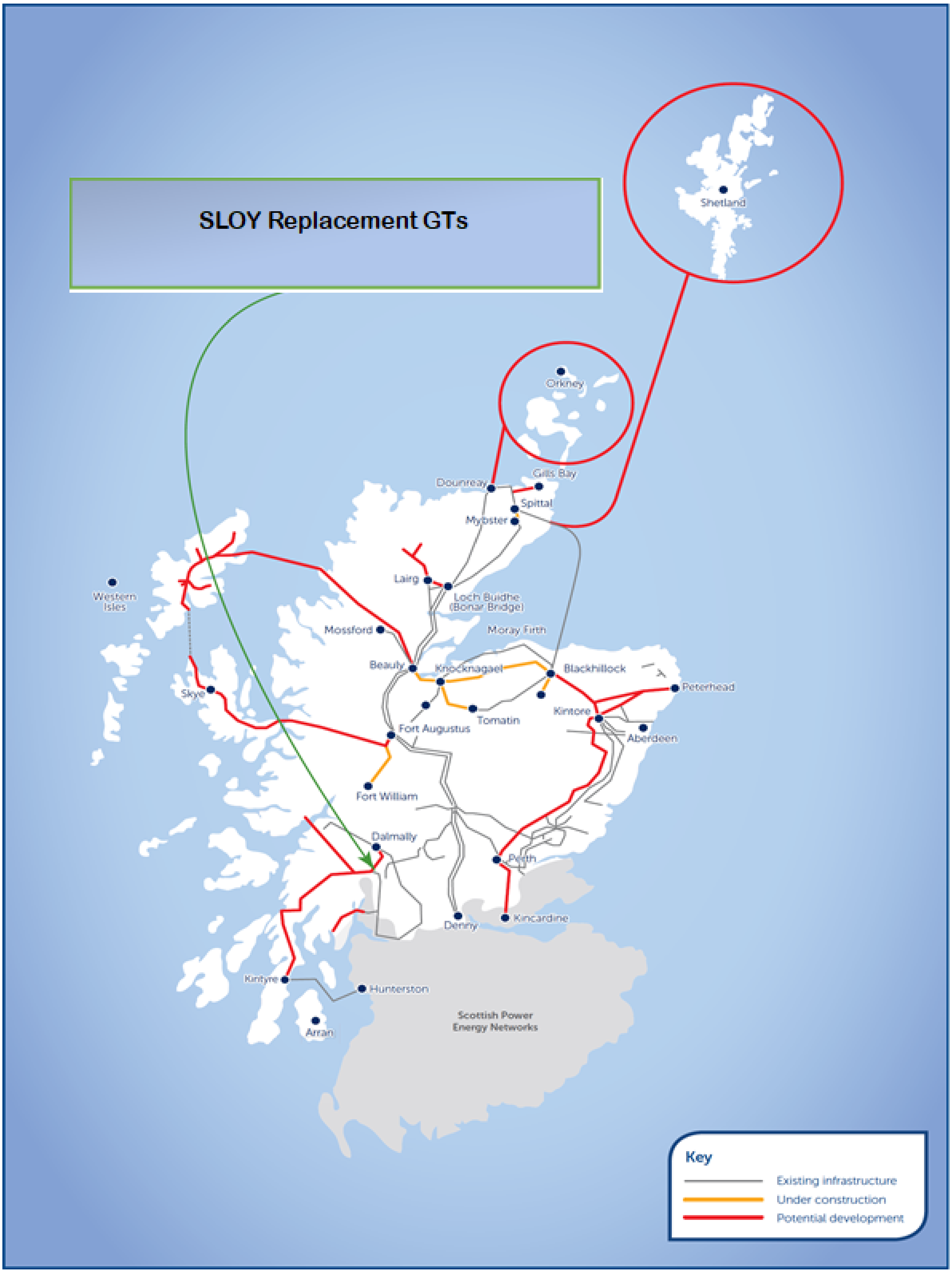
Section.7 Price Control Deliverables and Ring Fencing

This section provides a view of whether the proposed scheme should be ring-fenced or subject to other funding mechanism.

Section 8: Outputs included in RIIO-T1 Business Plan

This section identifies if some or all the outputs were included in the RIIO-T1 Business Plan and provides explanation and justification as to why such outputs are planned to be undertaken in the RIIO-T2 period.

Figure 1. Map showing the Sloy substation works on a map of SHET network



3 Need

This section provides an explanation of the need for the planned works. It provides evidence of the primary and, where applicable, secondary drivers for undertaking the planned works. Where appropriate it provides background information and/or process outputs that generate or support the need.

3.1 Background

Sloy Power Station is located on the western shore of Loch Lomond near Inveruglas, Argyll and Bute. The site is located within the Loch Lomond and The Trossachs National Park and can be accessed from the A82.

Sloy power station was constructed in 1950 and has a total capacity of 152.5MW. The SHE Transmission substation is located to the rear of the power station building and is a four transformer site that provides connections to Sloy Power Station and the local DNO. Two transformers provide direct connections to the power station (GT2 and GT3) and two transformers serve both the power station and local distribution network (GT1 and GT4). The four transformers are 132/11kV 25/50MVA (ONAN/OFAF) units, which were installed between 1995 and 1998.

The SHE Transmission substation at Sloy power station is not the same site as Sloy switching station, which is located to the south-west of the power station. The transformers at the power station are connected to Sloy switching station via 132kV OHL and underground cable circuits.

3.2 Asset Need

An asset condition report[2] (ACR) has been prepared for this substation which identified a need for intervention. The ACR draws upon information from a variety of sources with the key points summarised below. The four transformers at Sloy are of the same type and vintage. They are subject to similar load and duty cycles and are displaying similar symptoms. This indicates that all four transformers are subject to the same failure mode.

Furan analysis of the transformer oil has been undertaken periodically. All four transformers display increasing 2-furfural (2-FAL) trends which is an indication of solid insulation ageing. The absolute 2-FAL content of these transformers and their rate of increase is high enough to raise concerns about the condition of the solid insulation and its ageing rate. The trends are understood to be caused by the design and nature of the transformer duty cycle, which in turn has led to high operating temperatures and accelerated insulation ageing.

[2] Sloy Power Station Asset Condition Report (Rev 1.10) [T2BP-ACR-0011]

Further evidence of overheating is provided by Dissolved Gas Analysis (DGA) data which shows historic partial discharge and overheating faults. In addition to this, all four transformers have shown increasing moisture and acidity trends which indicate poor ageing performance.

The two transformers closest to end-of-life are GT1 and GT3. These assets are now approaching end-of-life at a faster than anticipated rate. Of particular concern is GT3 which also has a concerning acidity trend.

The external condition of the grid transformers has been confirmed to be adequate based on multiple sources including archived condition reports, iSIM, user input and site inspection.

The existing site at Sloy is very compact with four grid transformers and associated equipment fitted into a small space to the rear of the power station. The proximity of assets to each other and the power station building presents operational challenges and increased risks, including fire separation [redacted]

Multiple assets and facilities are shared between SHE Transmission, the local DNO and local generation customers. There is no SHE Transmission owned switchgear at Sloy Power Station, and so protection and isolation is reliant on remote sites (Sloy Switching Station) and third parties (local DNO and local generation customers). [redacted] Therefore, it is recommended in any replacement works that the separation issue is addressed through the installation of 11kV circuit breakers.

The recommendations from the condition assessment report for the immediate short term is to increase the oil sampling frequency on GT3, and to undertake furan analysis on all units on an annual basis. For the T2 period it is recommended to replace GT1 and GT3 and associated assets. The benefits of replacing GT2 and GT4 should be assessed through a CBA. 11kV breakers should be installed by SHE Transmission, and protection replacements should take place when replacing the associated transformer. Post-mortem analysis should be undertaken on the removed transformers to better understand the nature of the failure mode.

The network asset risk and the condition assessment report have shown the need to undertake intervention works on the Sloy Grid Transformers to prevent the temporary or permanent loss of the units. All four transformers are displaying symptoms of internal overheating and solid insulation ageing. The transformers are at various stages of deterioration with GT1 and GT3 in the worst condition. Ageing of this nature is permanent and cannot be reversed without major intervention.

Careful consideration of the existing site is required under option assessments, as it presents a number of inherent risks due to its location within the national park and the compact nature of the site. [redacted] In order to undertake maintenance on an existing bay at Sloy substation, a proximity outage is required on the adjacent bay.

3.3 Growth Need

Load profiles for all four GTs for the period of 2013 to 2018 have been downloaded from our PI Historian database. The loading for GT1, GT2 and GT3 has seen a peak of 40MVA across the period, while the loading for GT4 has seen a peak of 33MVA across the period. The Future Energy Scenarios (FES) out to 2050 have shown very limited growth in embedded generation on SHEPDs network at Sloy. Initial discussions with our customer have indicated there is no proposals to upgrade the output capacity of Sloy power station. As a result, there is no load driver to install larger capacity transformer units as part of the non-load replacement project.

4 Optioneering

This section presents all the options considered to address the need that is described in Section 3. Each option considered here is either discounted at this Optioneering stage with supporting reasoning provided or is taken forward for detailed analysis in Section 5. Table 1 lists each option and a brief summary.

Table 1 – Option summary table

Option	Option Detail	Taken Forward to Detailed Analysis
Do Nothing Option	Undertake no refurbishment work on the assets.	No
1	In situ replacement of GT1 and GT3	No
2	Offline build of GT1 and GT3	Yes
3	Offline Build of GT1, GT2, GT3, and GT4	Yes
4	Offline Build of GT1, GT2, GT3, and GT4 and an additional 11kV busbar for additional generator security.	No

Do Nothing Option

The do nothing option does not undertake any intervention on the transformers. This option has been discounted at this stage as the network asset risk and asset condition assessments have concluded a need to intervene and replace the assets.

NOT PROGRESSED TO DETAILED ANALYSIS

Option 1

This option considers;

- In situ replacement of GT1 and GT3 on a like for like basis within the existing substation space.
- Removal of the existing GT1 and GT3 from the existing site.

[redacted] This option would also require a phased approach to the works, requiring re-mobilisation to replace GT2 and GT4 at a later date. This option does not install 11kV circuit breakers on the LV side of the new transformers so does not resolve the asset separation issues that currently exist at Sloy power station. As a result of these highlighted issues this option is not progressed to detailed analysis.

NOT PROGRESSED TO DETAILED ANALYSIS

Option 2

This option considers;

- Construction of a new site compound near the existing substation at Sloy power station. An offline build of GT1 and GT3 at the new site, with space provision for future offline build of GT2 and GT4.
- Install two 132kV circuit breakers and four 11kV circuit breakers at the new substation.
- Tower and gantry works are required for connection to the OHL, and 11kV cables will be installed to connect to the power station.
- Remove the existing GT1 and GT3 and associated equipment at the existing substation.

This option would ensure that we meet current specifications for substations. This option would remove operational constraints that exist at the current site, which is the requirement for a second GT to be taken out of service to allow for maintenance on an adjacent bay.

[redacted] This option would also require a phased approach to the works, requiring re-mobilisation to replace GT2 and GT4 in the next price control period. It would also require additional works for temporary tower diversions due to orientation issues that would be faced at the new site if only GT1 and GT3 were replaced initially.

PROGRESSED TO DETAILED ANALYSIS

Option 3

This option considers;

- Construction of a new site compound near the existing substation at the power station. An offline build of GT1, GT2, GT3 and GT4 at the new site.
- Install four 132kV circuit breakers and eight 11kV circuit breakers at the new substation.

- Tower and gantry works are required for connection to the OHL, and 11kV cables will be installed to connect to the power station.
- Remove the existing GT1, GT2, GT3 and GT4 and associated equipment at the existing substation. These transformers cannot be retained as spares due to condition.

This option would ensure that we meet current specifications for substations. This option would remove operational constraints that exist at the current site, which is the requirement for a second GT to be taken out of service to allow for maintenance on an adjacent bay. It would also remove the requirement for returning to site in the next price control period to undertake further transformer replacement works. This option would also address the existing issues around asset separation at the existing power station.

[redacted]

PROGRESSED TO DETAILED ANALYSIS

Option 4

This option considers;

- Construction of a new site compound near the existing substation at the power station. An offline build of GT1, GT2, GT3 and GT4, and a new 11kV board at the new site.
- Install four 132kV circuit breakers and eight 11kV circuit breakers at the new substation.
- Tower and gantry works are required for connection to the OHL, and 11kV cables will be installed to connect to the power station.
- Remove the existing GT1, GT2, GT3 and GT4 and associated equipment at the existing substation. These transformers cannot be retained as spares due to condition.

This option would ensure that we meet current specifications for substations. This option would remove operational constraints that exist at the current site, which is the requirement for a second GT to be taken out of service to allow for maintenance on an adjacent bay. It would also remove the requirement for returning to site in the next price control period to undertake further transformer replacement works.

[redacted]

The 11kV busbar adds additional costs to the project but provides no additional benefit for SHE Transmission or the User. As a result, option 4 is not progressed to detailed to analysis.

NOT PROGRESSED TO DETAILED ANALYSIS

5 Detailed Analysis

This section considers in more detail each of the options taken forward from the Optioneering section. Where appropriate the results of Cost Benefit Analysis are discussed and together with supporting objective and engineering judgement contribute toward the identification of a selected option. The section continues by setting out the costs for the selected option.

5.1 Cost Benefit Analysis

Option 2 and Option 3 have been progressed to detailed analysis and have been included in the Cost Benefit Analysis (CBA). Our CBA Methodology[3] sets the process and mechanics of our approach to CBA. The non-load requirement for the RIIO T2 period is addressed through the baseline option – Option 2. The CBA is being undertaken to help determine the benefits of undertaking the replacement of all four GTs in the T2 period as opposed to only two GTs, as determined within the non-load requirement, and the remaining two GTs in the T3 period.

In order to assess the benefit of undertaking all four GTs within the T2 period, Option 2 needs to consider the requirement to replace GT2 and GT4 in the next price control period, T3. Therefore, the cost profile for the baseline option, Option 2, includes the costs for returning to site in the next price control to undertake the additional works to replace these transformers.

NPV's for the two options were calculated and compared against each other. The output from the CBA is shown in Table 2.

Table 2 – CBA results for the Sloy Substation Works.

CBA Option No.	**Total Forecast Expenditure** (£m)	**Total NPV**	**Delta** (Option to baseline)	**Total NPV** (Incl. Monetised Risk £m)
Baseline (Option 2)	-£55.05	-£48.48		-£16.53
Option 3	-£45.93	-£42.90	£5.58	-£14.20

The CBA has shown that in the analysis of the two options, Option 3 has the highest comparative NPV against the Baseline Option 2. The difference between the total NPV for the Baseline Option 2 and Option 3 is £5.58m. When taking account of the monetised risk benefit provided by each option, Option 3 still has a higher comparative NPV compared to the Baseline Option 2. The results from the CBA indicate it would more economic to undertake the replacement of all four GTs in the T2 period, as opposed to undertaking the replacement of two GTs in T2 and the replacement of two GTs in T3.

In addition, engagement on the proposed solutions has been undertaken with a number of stakeholders including local generators and DNO. These stakeholders will be directly impacted by the

[3] Cost Benefit Analysis Methodology

works and outages required to replace the transformers. We have also engaged with adjacent neighbours and landowners, and statutory licensees such as Transport Scotland. The feedback we have received from stakeholders on the options has indicated a preference for us to consider the "Responsible Operator" approach and undertake the necessary works under one project within T2, rather than having to re-mobilise in the next price control period and return to site to undertake replacement works.

5.2 Project Sensitivity

As outlined in our core RIIO-T2 business plan document, "A Network for Net Zero", we believe we have a critical role to play in delivering Net Zero ambitions in both the UK and Scotland. Therefore, our plan has been carefully designed with the flexibility to deliver pathways to Net Zero. Our policy paper "A Risk-Based Approach to Asset Management" outlines our approach to monitoring and assessing the condition of our assets to maintain the reliable and resilient network that is expected by our stakeholders. Where asset condition deteriorates, we undertake a programme of cost-effective, risk-based interventions to maintain the longevity and performance of the transmission network. Each of our non-load related projects for T2 is underpinned by Asset Condition Reports which clearly outline that the works are necessary and driven by reliability.

Table 3 – Sensitivity Analysis Table

Sensitivity	Test and impact observed – switching inputs
Asset Performance / deterioration rates	Switching deterioration assumption: The asset performance / deterioration rates can only improve or deteriorate. As the need for this project is driven by an asset condition report (as outlined in Section 3), the asset condition will not improve in the intervening period. The second option is for the asset performance to deteriorate and therefore the need remains, and the project would be considered for advancement within available outages.
Ongoing efficiency assumptions	Switching efficiency assumption: increased or decreased. Test would have no impact on (feasible) option selection, as the options move in parallel and have no impact on ordering within CBA.
Demand variations	No significant demand forecast.
Energy scenarios	Sensitivity considered in Section 3 (Need) already. As this is a non-load project and the need is driven by the asset condition, the work would be required regardless of any changes to the energy scenarios.
Asset utilisation	Our policy paper "A Risk-Based Approach to Asset Management" outlines our approach to monitoring and assessing the condition of our assets to maintain the reliable and resilient network that is expected by our stakeholders. Where asset condition deteriorates, we undertake a programme of cost-effective,

	risk-based interventions to maintain the longevity and performance of the transmission network. Each of our non-load related projects for T2 is underpinned by Asset Condition Reports which clearly outline that the works are necessary and driven for reliability.
Timing / delivery	We have considered timing of investments as part of our CBAs.
Consenting / stakeholders	Where applicable we have considered consenting and stakeholder engagement as part of section 5 (Detailed Analysis) and the impact which this has had on the selection of the preferred solution.
Public policy / Government legislation	We have considered the impact of public policy, government legislation and regulations as part of the need (Section 3), optioneering (Section 4) and detailed analysis (Section 5) and the impacts this has on the selection of the preferred solution. For example, the projects have considered the impact of the UK Governments' Net Zero emission by 2050 target, SQSS and ESQCR.

5.3 Proposed Solution

Based on the output of the CBA, and considering the stakeholder feedback on the options, the proposed solution is Option 3 as detailed in Section 4 Optioneering of this justification report. This option is the offline replacement at a new site of all four GTs at Sloy substation. This meets the requirements of the asset condition-based replacement that has to be undertaken within T2. It avoids us having to undertake additional spend for temporary tower diversions that would be required if undertaking an offline rebuild of GT1 and GT3 only in T2, due to orientation issues that would be faced at the new site. It also removes the requirement to re-mobilise in the next price control period to undertake further asset condition-based replacements. This meets stakeholder preferences for us to undertake the works as part of one project.

Table 4 – Outputs from Proposed Solution

Plant	Size of new plant	Replacement for
132/11kV transformer and ancillary plant	4 x 30/60MVA 132/11kV transformers	4 x 25/50MVA 132/11kV transformers
132kV switchgear	4 x 132kV circuit breakers	-
11kV switchgear	4 x 11kV circuit breaker	-

5.4 Competition

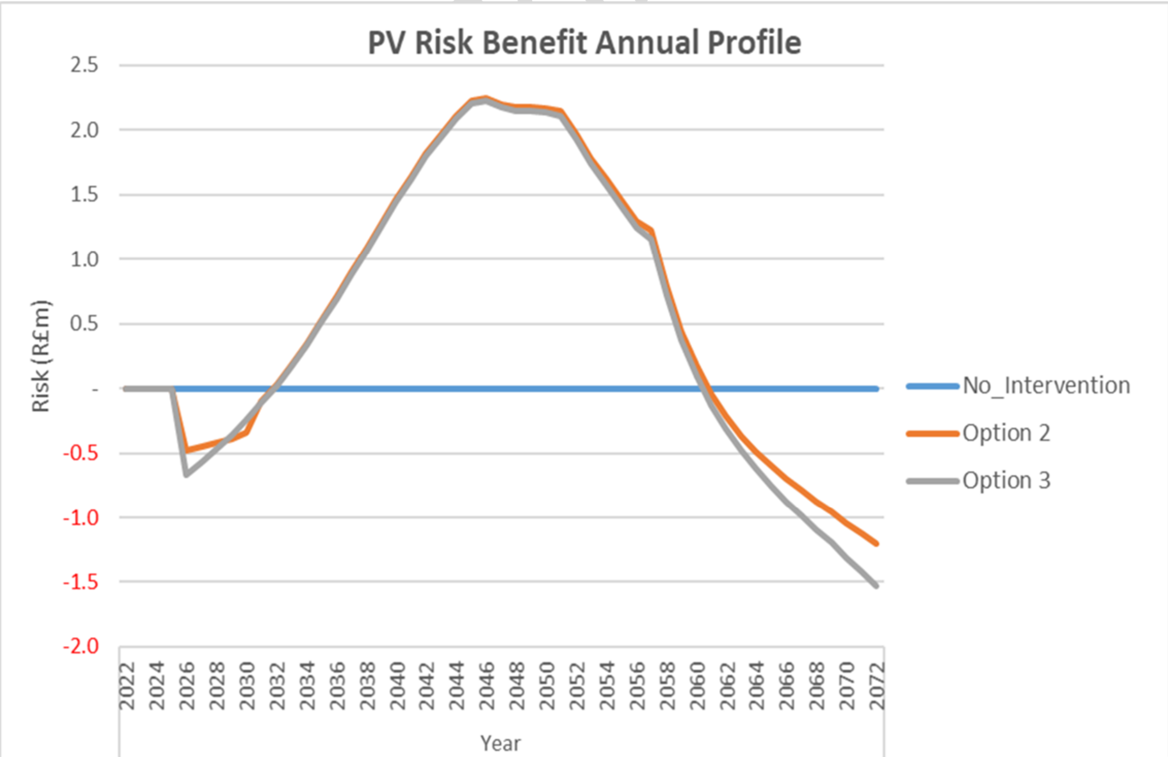
The Sloy Substation Works project is not flagged as eligible for early or late competition due to it being under Ofgem's £50m and £100m thresholds respectively.

5.5 Risk Benefit

A Risk Benefit Analysis has been carried out in order to compare "no intervention" against the selected "with intervention" option. Please note that while monetised risk is denoted as a financial figure, it is important to note that it is not "real" money and does not correspond to the cost that SHE Transmission would incur if an asset was to fail and these values are thus identified with R£ prefix (for more details please refer to A Risk Based Approach to Asset Management[1]).

The long-term monetised risk benefit which would be realised through the completion of this project is R£43.7m. The long-term benefit is derived by consideration of the risk of the asset experiencing a catastrophic failure weighted by the probability that the asset will survive for the Options and "no intervention" scenarios. The long-term benefit is an aggregation of the risk of all assets being considered within the option. The risk of each Option is then compared with the "no intervention" scenario. The "no intervention" scenario assumes that when the asset experiences a catastrophic failure the asset is replaced.

Figure 2. Long Term Benefit of Proposed Intervention – Option 3: 4 Transformer Rebuild



In addition to assessing the long-term risk benefit, a monetised risk benefit has also been determined. The monetised risk benefit which would be realised through the completion of this project is R£0.8m. The increase in monetised risk is as a result of introducing new lead assets (circuit breakers) where none previously existed, which introduce an increased risk profile.

Due to current functionality, the model only tracks one intervention performed in the year 2026 and tracks its long-term risk benefit until 2072. This intervention may only have a certain expected shelf life before further interventions should be used to maintain a certain level of risk on the asset. As the current model can only render one of these interventions, it's monetised risk benefit over time will begin to decrease depending on predicted asset failure curves. This may eventually lead to negative risk benefits (Per Year) found in later life or in the worst case an overall Negative Long-Term Risk Benefit between the years 2026 to 2072.

5.6 Innovation & Sustainability

This substation will be situated in an environmentally sensitive area. Therefore, we will consider the use of ester-based fluid filled transformer units in the design to mitigate the potential environmental impact of the installation.

5.7 Carbon Modelling

We are committed to managing resources over the whole asset lifecycle – i.e. including the manufacturing of assets, construction, operations and decommissioning activities – to reduce our greenhouse gas emissions in line with climate science and become a climate resilient business. It is our aspiration that the carbon lifecycle cost of investment options plays a key role within our project development and is considered in the selection of a preferred solution. We have therefore developed an internal carbon pricing model that estimates a carbon cost for each option considered in our CBA through deriving values for:

1. Embodied carbon, which relates to the carbon emissions associated with the manufacturing and production of the materials use in production of the lead assets (transformer, reactors, underground cables and overhead lines. Overhead line is made up of tower/wood pole/composite pole, conductor and fittings) procured and installed as part of the project.

2. The carbon emissions associated with the main stages of the project lifecycle (construction, operations and decommissioning).

It is our vision to embed carbon considerations within our strategic optioneering and project development processes, which will require us to determine a way of flagging high carbon options within our CBA outputs. We will continue to develop our thinking in this space, which will involve our model being validated by a third party, so the results included in this EJP are indicative and subject to change.

In terms of the results of analysis for this project, which are captured in the carbon footprint results table, Baseline Option 2 is the option that delivers the lowest comparative carbon footprint, which does not align with our option selection in the CBA. We are still developing our carbon modelling, and through this we hope to be able to identify methods to reduce the carbon impact as the project moves through the development process.

Table 5 – Carbon Footprint Modelling for the Sloy Substation Works.

	Project Information	Baseline (Option 2)	Option 3
Project info	Project Name/number		
	Construction Start Year	2026	2026
	Construction End Year	2028	2028
Cost estimate £GBP	Embodied carbon	£ 232,262	£ 284,532
	Construction	£ 423,097	£ 436,025
	Operations	£ 39,204	£ 78,408
	Decommissioning	£ 193,705	£ 199,624
	Total Project Carbon Cost Estimate	**£ 888,269**	**£ 998,589**
Carbon footprint tCO2e	Embodied carbon	3,101	3,799
	Construction	5,565	5,735
	Operations	171	343
	Decommissioning	557	574
	Total Project Carbon (tCO2e)	**9,394**	**10,451**
Project Carbon Footprint by Emission Category	Total Scope 1 (tCO2e)	86	172
	Total Scope 2 (tCO2e)	85	171
	Total Scope 3 (tCO2e)	9,223	10,108
SF• Emissions	Total SF• Emissions 3 (tCO2e)	68	137

5.8 Cost Estimate

The cost of the preferred option for works at Sloy has been developed using rates from existing substation framework contracts and benchmarks from delivered RIIO-T1 projects. The total cost for delivering the scope of works for the proposed solution is £45.3m. The works are planned to be completed within the RIIO T2 period.

6 Conclusion

This paper identifies the need for intervention on the transformers at Sloy. The primary driver for this scheme is the asset condition of the existing transformers.

Following optioneering and detailed analysis, as set out in this paper, the proposed scope of works is:

- Construction of a new site compound near the existing substation at the power station. An offline build of GT1, GT2, GT3 and GT4 at the new site.
- At the new substation install four 132kV circuit breakers, and eight 11kV circuit breakers.
- The existing GT1, GT2, GT3 and GT4 and associated equipment at the existing substation are to be removed.
- Tower and gantry works are required for connection to the OHL, and 11kV cables will be installed to connect to the power station.

This scheme will cost £45.3m and will deliver the following outputs and benefits during the RIIO-T2 period:

- A long-term monetised risk benefit of R£43.7m;
- An immediate reduction of network risk calculated as R£0.8m; see Section 5 for details; and,
- Improved operational flexibility and resilience in line with our goal to aim for 100% transmission network reliability for homes and businesses.

The Sloy Substation Works project is not flagged as eligible for early or late competition due to it being under Ofgem's £50m and £100m thresholds respectively.

7 Price Control Deliverables and Ring Fencing

As set out in our Regulatory Framework paper (Section 1.12 and Appendix 3) we support a key principle from Citizens Advice – one that guarantees delivery of outcomes equivalent to the funding received - to ensure that RIIO-T2 really deliver for consumers.

For our core non-load projects this means that we commit to delivering our overarching NARMs target. If we do not deliver the NARMS target, or a materially equivalent target, then we should be subject to a penalty. Equally, if we over-deliver against our target and are able to justify that the over-delivery is in the consumers interests and could not have been reasonably factored into our business plan at the time of target setting then we should be made cost neutral for this work.

Core non load projects should not be ring fenced. This is to allow for substitution of projects in order to meet that NARMs target. We need flexibility to respond to up to date asset data information or external influences on our network during the price control; this information might drive us to substitute one project for another in order to ensure a reliable and resilient network. Ring fencing projects may result in sub-optimal decisions, having adverse consequences for the health of our network, which will ultimately be reflected in the NARMs target.

8 Outputs included in RIIO T1 Business Plan

There are no outputs associated with this scheme included in our RIIO T1 plans.

Appendices

Appendix A: New Proposed Sloy Substation Electrical diagram

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